Phase II Stormwater Management Program 2016 Annual Report

Permit No. MI0057364

May 2017

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Acronyms and Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
BMP	Best Management Practice
EOC	Engineering Operations Committee
EPA	United States Environmental Protection Agency
FY	Fiscal Year
IDEP	Illicit Discharge Elimination Program
LTAP	Local Technical Assistance Program
MDEQ	Michigan Department of Environmental Quality
MDOT	Michigan Department of Transportation
MEP	Maximum Extent Practicable
MPO	Metropolitan Planning Organization
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollution Discharge Elimination System
PIPP	Pollution Incident Prevention Plans
PPGH	Pollution Prevention Good Housekeeping
QAQC	Quality Assurance Quality Control
ROW	Right of Way
SCOE	AASHTO Standing Committee on the Environment
SEMCOG	Southeast Michigan Council of Governments
SESC	Soil Erosion and Sedimentation Control
SWMP	Stormwater Management Plan
TMDL	Total Maximum Daily Load
TSC	Transportation Service Center
YTD	Year to Date

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Appendices

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1. Introduction

This Annual Report presents stormwater pollution control activities implemented by Michigan Department of Transportation (MDOT) during the 2016 monitoring period, in compliance with the National Pollutant Discharge Elimination System (NPDES) Permit No. MI0057364, hereinafter referred to as the Permit. The Permit was issued by the Michigan Department of Environmental Quality (MDEQ) and expired on April 1, 2009. The Permit has been administratively extended and MDOT is continuing to comply with the existing permit. A permit renewal application was submitted for review and the new permit is expected to be issued during 2017.

As part of the renewal application, MDOT has created a comprehensive Stormwater Management Plan (SWMP) designed to reduce the discharge of pollutants from the MDOT drainage systems to the maximum extent practicable (MEP), protect the designated uses of the waters of the state, increase awareness of stormwater as a potential source of pollutants, and satisfy the applicable state and federal water quality requirements.

1.1. Report Objectives

The objectives for this annual report are as follows:

- To inform MDOT Staff about SWMP activity accomplishments
- To satisfy MDOT's annual reporting requirement of the Permit
- To evaluate and assess the appropriateness and effectiveness of MDOT's SWMP, and
- To present information about new programs, changes to current programs and procedures developed by MDOT.

1.2. Report Organization

The annual report highlights actions MDOT has completed in 2016 to fulfill Permit requirements. The reported information closely follows the requirements of the six minimum measures of the Permit which include:

- Public Education Program
- Public Involvement and Participation
- Illicit Discharge Elimination Plan (IDEP)
- Post Construction Stormwater Management for New Development and Redevelopment Projects
- Construction Stormwater Runoff Control
- Pollution Prevention/Good Housekeeping for MDOT Operations

1.3. Program Assessment

Program assessment is primarily determined by MDOT's adherence to the activities and measurable goals committed to in the SWMP, as well as regular evaluation of stormwater related procedures, training, and programs.

1.4. Summary

During 2016, MDOT worked toward completing the activities laid out in the SWMP. Several of these activities are ongoing and completed each year. Work on many of the activities has not yet begun. Due to time and budget management purposes, activities that are not required to be completed each year are divided between the five years of the permit cycle.

With the updated SWMP, care will be taken to ensure that MDOT's commitments, as written in the SWMP, are fulfilled; however, as the program evolves, modifications may need to be made to the original activity, the measurable goal, or both. Details regarding current activities, measurable goals, and their assessment method are contained in the Appendices.

MDOT will continue to integrate stormwater management awareness across all business areas. Informing and educating MDOT Regions, TSCs, Maintenance Regions and Garages about the new stormwater permit requirements will be a priority in 2017. Significant changes have been implemented that will impact many design and operational functions of MDOT. MDOT remains committed to allocating the necessary resources to meet the requirements of the Permit meeting environmental regulations for stormwater discharges.

2. Public Education Program

In order to educate MDOT employees as well as the general and job related public on stormwater management, MDOT has developed several mediums for which to convey information. MDOT employees have access to information focused on stormwater by utilizing the reference library, various training modules, a pesticide/fertilizer certification course, and stormwater operator staff training. The job-related public is provided with specified information when applying for a permit, such as a tap-in discharge permit.

MDOT has developed several displays and handout materials targeting the general public's various audiences including school-age children and transportation construction. The materials are available, in electronic format, for viewing and downloading from the MDOT Stormwater Public Web Page. In addition, MDOT distributes these materials at various events, as applicable.

The following section presents the seven Public Education Program activities as outlined in the SWMP. Appendix A presents each activity's table, including a description of objectives completed in 2016.

2.1. Activities

The following activities are presented in table format with the current monitoring year results in Appendix A. Detailed descriptions of each activity can be referenced in the SWMP.

- Education 1: Stormwater and Watershed Stewardship Reference Library
- Education 2: Stormwater Management Website
- Education 3: Stormwater Management Education Brochures
- Education 4: Educational Materials for Tap-In Discharge Permits
- Education 5: Training Modules
- Education 6: Pesticide/Fertilizer Applicator Certification
- Education 7: Staff Training for Part 91 and Stormwater Operators

2.2. Upcoming Monitoring Year Goals

The 2017 monitoring year will include various efforts within the Public Education Program, as presented below.

For Activity Education 2, a contact for questions and concerns related to MDOT's stormwater management program will be added to the website. This will make it easier for the general public to voice opinions about the program. This activity is closely related to the measurable goal Public Involvement and Participation.

MDOT will begin to review and update educational brochures related to stormwater management in 2017, as described in Activity Education 3. These brochures will continue to be passed out at relevant events, as well.

Activity Education 4 will be a focus for the year 2018 and involves reviewing and updating the educational materials that are distributed along with Tap-In Discharge Permits.

MDOT will continue to review and update the training modules, train staff in pesticide and fertilizer application, and track the number of staff trained under Part 91 and Stormwater Operators as described in Activities Education 5, 6 and 7.

3. Public Involvement and Participation

In addition to providing educational materials to MDOT staff and the public, MDOT is also working to encourage public input in the SWMP and strengthen relationships with other agencies interested in the better management of stormwater. Strategies have been devised to encourage and track comments to the SWMP on the public stormwater website and to pursue relationships with other state and local agencies to further stormwater management practices on various projects. Several activities listed under other minimum measures will also help to achieve the goal of this minimum measure.

The following section presents the three Public Involvement and Participation activities as outlined in the SWMP. Appendix B presents each activity's table, including a description of objectives completed in 2016.

3.1. Activities

The following activities are presented in table format with the current monitoring year results in Appendix B. Detailed descriptions of each activity can be referenced in the SWMP.

- Public Involvement 1: Public Comment of SWMP
- Public Involvement 2: Development of Offset Program
- Public Involvement 3: Identify and Coordinate with MPOs Having SWMPs

3.2. Upcoming Monitoring Year Goals

The 2017 monitoring year will include various efforts within Public Involvement & Participation, as presented below.

Under Activity Public Involvement 1, MDOT will finalize the draft of the SWMP using comments from MDEQ. This draft will be posted on MDOT's stormwater website and distributed to all TSCs and Region offices. In addition, a comment forum will be developed so the public can easily submit comments. MDOT will report and respond to public comments on the SWMP and post the final SWMP on the MDOT stormwater website by the end of 2017, pending permit approval.

Activity Public Involvement 2 involves developing a list of organizations for other state agencies, drain commissioners and municipalities to reach out to for offset programs. This will likely be done in 2018.

MDOT will continue to consider watershed and environmental groups input during early coordination of MDOT projects, per the objective of Activity Public Involvement 3.

4. Illicit Discharge Elimination Plan

This annual report assesses the IDEP as one of the six minimum measures stated in the Permit to be reviewed by the MDEQ. The framework for the IDEP activities is outlined in the MDOT SWMP (MDOT, 2016). MDOT's strategies provide for continued identification of illicit discharges and the notification and removal of such connections and discharges.

The following section presents the five IDEP activities as outlined in the SWMP. Appendix C presents each activity's table, including a description of objectives completed in 2016.

4.1. Activities

The following activities are presented in table format with the current monitoring year results in Appendix C. Detailed descriptions of each activity can be referenced in the SWMP.

- IDEP 1: Maintain List of Construction Projects and Maintenance Activities
- IDEP 2: Urban Area Outfall Mapping
- IDEP 3: Dry Weather Screening
- IDEP 4: Review Procedure for Receiving and Notifying MDEQ of Illicit Discharges
- IDEP 5: Determining Effectiveness of IDEP

4.2. Upcoming Monitoring Year Goals

The 2017 monitoring year will include various efforts within the IDEP, as presented below.

Under Activity IDEP 1, MDOT will develop an annual list of construction projects and maintenance activities which include work on the drainage system at the end of the fiscal year. This activity will continue to be completed each year of the permit cycle.

MDOT will update any outfall maps as needed throughout the permit cycle, in accordance with Activity IDEP 2.

Activity IDEP 3 measurable goals are a combination of ongoing activities and activities that will be spread between the five year permit cycle. For example, the first measurable goal of following the illicit discharge procedure for all illicit discharges and connections will be ongoing. The pilot dry weather screening project will be completed over a five year period. In 2016, the desktop analysis was completed. In years 2017 through 2020, field work and data gathering will be completed. In 2020, the pilot project will be completed and the program results can be assessed.

Per IDEP 5, illicit discharge notices and resolutions will be reported in the 2017 Annual Report. This is an ongoing activity and will be done for each year during the permit cycle.

5. Post Construction Stormwater Management for New Development and Redevelopment Projects

MDOT's Post Construction Stormwater Management for New Development and Redevelopment Projects is a measure designed to address post construction stormwater runoff from MDOT projects and procedures for addressing post construction runoff from projects outside of the MDOT right-of-way. These goals will be achieved through structural best management practices (BMPs) designed to remove pollutants and possibly limit runoff rates from MDOT rights-of-way and other facilities.

The following section presents the six activities for Post Construction Stormwater Management for New Development and Redevelopment Projects, as outlined in the SWMP. Appendix D presents each activity's table, including a description of objectives completed in 2016.

5.1. Activities

The following activities are presented in table format with the current monitoring year results in Appendix D. Detailed descriptions of each activity can be referenced in the SWMP.

- Post Construction 1: Structural BMP Mapping
- Post Construction 2: BMP Maintenance Requirements
- Post Construction 3: Selection and Application of BMPs
- Post Construction 4: Water Quality and Channel Protection Compliance
- Post Construction 5: TMDL Compliance
- Post Construction 6: Drainage Manual Update

5.2. Upcoming Monitoring Year Goals

The 2017 monitoring year will include several efforts within Post Construction Stormwater Management, as presented below.

Under Activity Post Construction 1, MDOT will update the map of all known BMPs in the state at the end of 2017. Furthermore, MDOT plans to develop a means of communicating newly constructed BMPs to the Stormwater Program Manager during 2017.

Per Activity Post Construction 2, MDOT will review the maintenance performance guidelines in 2018. It will be a focus for each year to develop maintenance procedures for new structural BMPs and notify appropriate staff of these procedures.

Activity Post Construction 4 involves the development of a BMP selection tool to aid MDOT designers with the management of stormwater at the scoping level planning stage. This tool was developed in 2016, and a focus for 2017 will be to distribute the tool as well as training to all relevant MDOT employees. It is an eventual goal that all projects will use this tool as a scoping level analysis to

determine if the project needs BMPs to address water quality and water quantity issues and, if so, which BMPs could meet the site's needs.

The interactive mapping system to be used for storm water management planning during the scoping phase, will be posted by the end of 2017 on the MDOT Stormwater site showing MDOT trunklines that cross 303(d) listed water bodies, per the objective of Activity Post Construction 5.

6. Construction Stormwater Runoff Control

Per the Permit, MDOT is required to establish and maintain a Soil Erosion and Sedimentation Control program. Appropriate MDOT staff are trained and certified under this program. MDOT continually educates it contractors about its Soil Erosion and Sedimentation Control program (SESC), as well, on a project by project basis using the information discussed at preconstruction meetings.

The following section presents the Construction Stormwater Runoff Control activity as outlined in the SWMP. Appendix E presents the activity table, including a description of objectives completed in 2016.

6.1. Activities

The following activities are presented in table format with the current monitoring year results in Appendix E. Detailed descriptions of each activity can be referenced in the SWMP.

- Construction 1: Review of Stormwater Runoff QAQC Protocol

6.2. Upcoming Monitoring Year Goals

Per the objective identified in Construction Stormwater Runoff Control 1, MDOT will review the QAQC protocol for construction stormwater control by January of 2018.

7. Pollution Prevention / Good Housekeeping

The ultimate goal of the Pollution Prevention and Good Housekeeping program is to prevent or reduce pollutant runoff from MDOT operations and properties to the MEP. Facilities covered under this measure include MDOT offices, bridge facilities, maintenance garages, central repair, welcome centers, rest areas, roadside parks and scenic turnouts.

The following section presents the four Pollution Prevention / Good Housekeeping activities as outlined in the SWMP. Appendix F presents each activity's table, including a description of objectives completed in 2016.

7.1. Activities

The following activities are presented in table format with the current monitoring year results in Appendix F. Detailed descriptions of each activity can be referenced in the SWMP.

- Pollution Prevention 1: BMP Inspections
- Pollution Prevention 2: PIPP Audits
- Pollution Prevention 3: Maintenance Facility Inspections
- Pollution Prevention 4: Documentation of Road Maintenance Activities

7.2. Upcoming Monitoring Year Goals

The 2017 monitoring year will include a number of efforts within Pollution Prevention / Good Housekeeping, as presented below.

Under Activity Pollution Prevention 1, thirty four BMPs are scheduled for inspection in 2017. The findings of these inspections will be given to the Stormwater Program Manager and any recommendations will be addressed in the following year. At the end of the five year permit cycle, each structural BMP will have been inspected.

Activity Pollution Prevention 2 discusses auditing the pollution incident prevention plans every three years. In 2017, a new schedule for this activity will be developed such that this schedule will be met. Audits are scheduled to begin in 2018.

For the year 2017, there will be eight MDOT maintenance facilities that will be inspected, in compliance with Activity Pollution Prevention 3. The findings of these inspections will be given to the Stormwater Program Manager and any recommendations will be addressed. At the end of the five year permit cycle, each maintenance facility will have been inspected.

The objective for Activity Pollution Prevention 4 is to provide for continued street sweeping and catch basin cleanout, following maintenance performance guidelines.

REFERENCES

MDOT, 2016. Stormwater Management Plan. Michigan Department of Transportation.

Appendix A – Education Activities

ACTIVITY EDUCATION 1: CONVERT LANSING INFORMATION CENTER TO WEB-BASED STORMWATER LIBRARY

MONITORING YEAR: 2016

Minimum Control Measure : Education/ Outreach **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMNISTRATION1: Program Assessment and Reporting · EDUCATION 2: Update MDOT Public Website

OBJECTIVE

Convert the current physical information center to a web based archive containing stormwater-related materials for training and educating the job-related public including video, reference manuals and publications.

DESCRIPTION

Converting the existing, physical library to an online archive will increase ease of accessibility for MDOT employees and the job-related public. The library is to be comprised of informational materials to support activities performed for the MDOT Stormwater Management Plan.

ANNUAL REPORTING

- Complete conversion from physical to web-based library
- Track the web page traffic and number of content downloads

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
The existing, physical stormwater library housed in Lansing will be converted to an online database, available on the MDOT Stormwater Website.	Materials transferred to the online, public website by year 2020.
Annual Assessment: This activity will be a focus for 2018-2020.	
A list of stormwater-related materials will be updated quarterly on the MDOT Stormwater Public Web Site.	List of updates provided quarterly to the region stormwater and IDEP coordinators
Annual Assessment: There was 1 update to the public stormwater site. The contact page was updated to reflect staffing changes.	
Quarterly notices will be made in the Monday Memo to advertise the stormwater-related library material.	Number of “Monday Memo” articles issued relating to the stormwater program.
Annual Assessment: There was 1 notice placed in the “Monday Memo” alerting staff to the location and availability of the newly created stormwater training module.	
MDOT Staff to participate in the Southeast Michigan Green Infrastructure (GI) team in order to share relevant information to the job-related public via the MDOT Stormwater Public Website.	Staff participating in the team will provide materials to be posted on the MDOT Stormwater Public Website to the Aquatic Resource Specialist quarterly
Annual Assessment: The GI team held one meeting in 2016 and was attended by MDOT staff. There was no new information to place on the MDOT public website.	

ACTIVITY EDUCATION 2: UPDATE WATERSHED STEWARDSHIP INFORMATION ON MDOT PUBLIC WEBSITE

MONITORING YEAR: 2016

Minimum Control Measure : Education/ Outreach **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · EDUCATION 1: Lansing Information Center Conversion

OBJECTIVE

Information pertaining to watershed stewardship currently available that is pertinent to the general, traveling public will be maintained and kept available for public use and access. Information to be updated quarterly will focus on job-related activities specific to MDOT employees. A comment form will also be developed to provide feedback on the website and available information.

DESCRIPTION

MDOT will update the public information website about the Phase II stormwater program. The website provides general information about watershed stewardship practices as well as links to pertinent stormwater-related materials. This information will be maintained and monitored to report website usage. Updated information will focus on job-related activities relevant to MDOT.

ANNUAL REPORTING

- Track internal and external website traffic
- Track number of SWMP document downloads on the MDOT stormwater public website.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
The MDOT Stormwater Public Web Site will be updated quarterly with the most recent MDOT stormwater information and news relevant to the job-related and traveling public.	Updates to be tracked by the Stormwater Program Manager.
Annual Assessment: The MDOT public stormwater page contacts section was updated to reflect changes in staffing that deal with stormwater related issues. It contains current contact information for the stormwater program manager, support staff, as well as the region stormwater and IDEP coordinators.	
A stormwater-related contact will be developed for inclusion on the MDOT Stormwater Public Web Site.	Contact will appear on the MDOT Stormwater Website and be forwarded to the Stormwater Program Manager.
Annual Assessment: See above comment.	
Comments received via contact link will be reviewed and addressed, as necessary. The comments will be archived to track the change in public awareness and behavior resulting from the implementation of the Public Education Program.	Comments will be addressed as necessary as determined by the Technology Manager and the Stormwater Program Manager
Annual Assessment: An email address has been created to allow for public comment and questions regarding the MDOT stormwater program on the contacts page. To date, there have been no public inquiries.	

ACTIVITY EDUCATION 3: UPDATE STORMWATER MANAGEMENT BROCHURES

MONITORING YEAR: 2016

Minimum Control Measure : Education/ Outreach **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · EDUCATION 2: MDOT Stormwater Website

OBJECTIVE

Further the public knowledge on stormwater and how MDOT manages stormwater through informative brochures.

DESCRIPTION

Informative brochures currently exist on MDOT's Stormwater website and are also distributed at events such as job fairs and various community outreach events. These brochures will be updated to contain up to date information about stormwater management.

ANNUAL REPORTING

- Track completion of brochure updates
- Track number of downloads from website

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Review and update existing brochures relating to stormwater management.	To be posted on the MDOT stormwater website.
Annual Assessment: This will be a goal for 2017.	
Continue to distribute brochure materials at community events, job fairs, and other relevant events.	To be distributed at various event.
Annual Assessment: These materials are distributed at events, as applicable.	

ACTIVITY EDUCATION 4: REVIEW EDUCATION MATERIALS DISTRIBUTED WITH TAP-IN/DISCHARGE PERMIT APPLICATIONS AND UPDATE/DEVELOP TRACKING SYSTEM FOR TAP-IN PERMITS

MONITORING YEAR: 2016

Minimum Control Measure : Education/Outreach **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment & Reporting · IDEP 4: Procedure for Receiving & Notifying MDEQ of Illicit Discharges & Actions Taken

OBJECTIVE

Education materials inform applicants of acceptable discharges into the MDOT drainage system, and also of the potential negative impacts to water quality from unacceptable or illegal discharges and ways to mitigate these impacts. A tracking system will enable MDOT to keep better track of those who have tap-in permits.

DESCRIPTION

Preparing education materials for typical development activities connecting to MDOT facilities. Established and implemented procedures for distributing these materials.

ANNUAL REPORTING

· Track quantity of permit applications/educational materials distributed.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Review educational materials included in the tap-in/discharge permit application.	Items that need to be improved, as determined by the review process, will be given to the permit workgroup.
Annual Assessment: This will be a focus for 2017.	
Incorporate review comments into education materials included in the tap-in/discharge permit application.	Updated materials will be distributed to the new permit applicants.
Annual Assessment: This will be a focus for 2017.	
Distribute education materials to 100% of tap-in/discharge permit applicants.	MDOT Permitting Staff to follow up with applicants to ensure information was received.
Annual Assessment: Educational materials were distributed for all tap-in discharge permits in 2016 and will continue to be distributed throughout the permit cycle. There were 64 tap-in discharge permits approved and 1 rejected in 2016. The breakdown of these numbers by region are available in the figure on the following page.	
Review the adequacy of the procedure for distributing materials.	MDOT Permitting Staff to meet with MDOT Stormwater Staff to discuss necessary changes to education materials distributed to permit applicants.
Annual Assessment: This will be a focus for 2018 through the end of the permit cycle.	

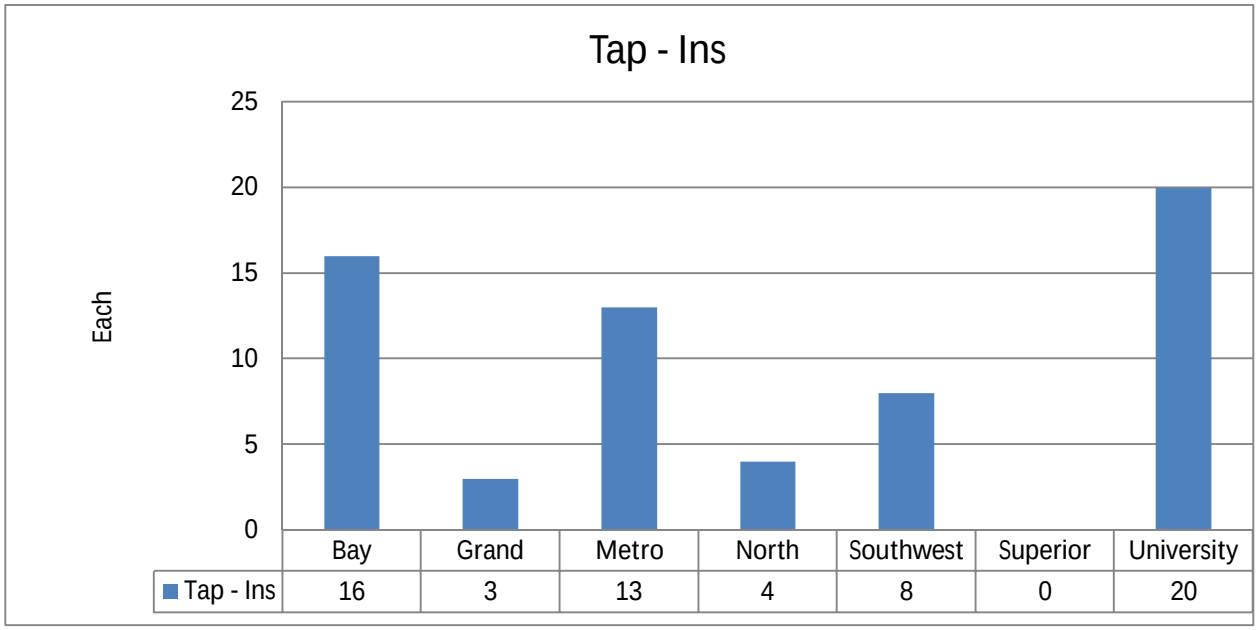


Figure A1 – 2016 Tap-In Permits Issued By Region*

*One permit application was denied in the Southwest Region.

ACTIVITY EDUCATION 5: UPDATE EXISTING MODULES AND DEVELOP MS4 TRAINING MODULE FOR DESIGNERS

MONITORING YEAR: 2016

Minimum Control Measure : Training Activities **Statewide or Urbanized Area:** Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · IDEP 4: Notify MDEQ of Illicit Discharges

OBJECTIVE

Educate the job-related public about the Stormwater Management Program, focusing on design.

DESCRIPTION

Use the four 15 minute MDOT stormwater program training modules to train Lansing and Region/TSC staff and contract agencies.

- Module One: Introduction to SW Management
- Module Two: Best Management Practices
- Module Three: Maintenance Considerations
- Module Four: Illicit Discharge & Maintenance
- A new module on MS4's for all MDOT staff

ANNUAL REPORTING

- Track training attendance.
- Track contract agencies receiving modules.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Review and update modules to pertain up to date information relevant for designers. Once updated, modules will be added to the MDOT training database (On-Track) to track individual employee training. Training completion shall be included in employee performance evaluations. The first update will add illicit discharge reporting and notification information to Training Module Four.	Modules to be updated annually and confirmed by the MDOT Stormwater Program Manager
Annual Assessment: In 2016, a Municipal Separate Storm Sewer System (MS4) training module was developed. This module was created as an overview of MS4's, how MDOT complies with MS4 requirements, and guidance for designers on stormwater management. Creating this module was the first step for MDOT in developing updated versions of existing training modules and feedback on this module will be considered in development of these other modules, as well. In the future, the remainder of the training modules will be reviewed and updated, if necessary.	
Determine specifically who will be trained with the stormwater modules. All new employees shall be trained within the first year. All staff shall be trained once per permit cycle. Maintenance and construction staff with stormwater responsibilities will be trained to follow the illicit discharge notification procedure with the MS4 Training Module.	List of trained employees reported by the MDOT training coordinator to Stormwater Program Manager
Annual Assessment: The MS-4 Training module was completed in December of 2016 and made available on the department's intranet site. A total of 28 individuals from MDOT viewed the module in that month.	

Provide modules to contract agencies and contracting associations with a request to use the modules. Provide information through the Michigan Local Technical Assistance Program (LTAP).	Modules given to contract agencies on an as needed basis.
Annual Assessment : No agency requests have been reported for 2016.	

ACTIVITY EDUCATION 6: CERTIFY MDOT'S STAFF FOR PESTICIDE/FERTILIZER APPLICATIONS

MONITORING YEAR: 2016

Minimum Control Measure : Training Activities **Statewide or Urbanized Area:** Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting

OBJECTIVE

To reduce pollution entering waters of the state, statewide, that originates from pesticide and/or fertilizer applications.

DESCRIPTION

The existing training and certification program for pesticide/fertilizer applications will be evaluated and tracked to document performance and to prevent stormwater pollution. A turf grass management plan and soil testing for nutrients to determine appropriate fertilizer usage shall be added to the existing training. Results will be used to recommend changes if appropriate.

ANNUAL REPORTING

- Track the number of individuals attending annual pesticide training.
- Track number of MDOT personnel certified as a pesticide applicator.
- Summarize evaluation and review of programs, policies, procedures and information.
- Report changes to fertilizer specifications.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
MDOT Staff applying pesticides will be trained and certified per Michigan Department of Agriculture requirements. Staff are responsible for ensuring their certification is completed every three years and they have appropriate certification documents.	List of trained employees will be provided by the MDOT training coordinator to the Stormwater Program Manager by the TSC Region offices.
Annual Assessment: All MDOT staff that apply fertilizer or pesticides attend a training, which is offered each year. Staff must attend training every three years to maintain their certification. In 2016, there were 53 MDOT staff members who attended the pesticide and fertilizer training. The breakdown of staff by region is available in the figure on the next page.	
MDOT Staff or Contract Agencies will follow MDOT's Standard Specifications for Construction, Sections 816 and 917 for fertilizer application practices.	Verified by MDOT Stormwater Program Manager.
Annual Assessment: This specification is a focus of the MDOT fertilizer and pesticide application training. In 2016, staff and agencies were in compliance with these specifications.	
Evaluate application practices and pollution prevention measures and recommend and formalize any changes if appropriate.	A task to be completed annually, as checked by the Stormwater Program Manager.
Annual Assessment: This effort will be a focus for 2018.	

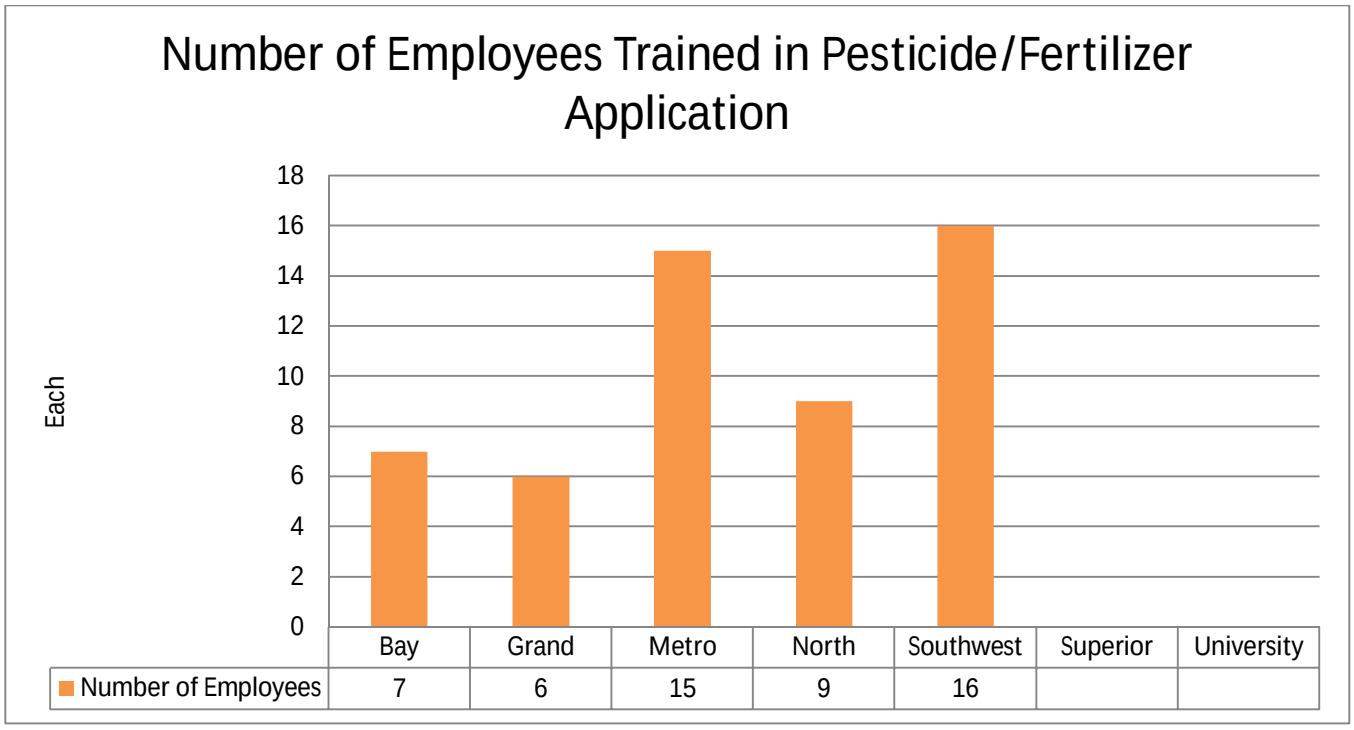


Figure A2 – 2016 Pesticide Training By Region

ACTIVITY EDUCATION 7: TRAIN STAFF RESPONSIBLE FOR ADMINISTERING PART 91 AND STORMWATER OPERATORS

MONITORING YEAR: 2016

Minimum Control Measure : Training Activities **Statewide or Urbanized Area:** Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · CONSTRUCTION 1: Review QAQC Protocol for Construction Stormwater Runoff Control

OBJECTIVE

To reduce non-stormwater discharges to the MEP to receiving water bodies.

DESCRIPTION

The existing MDEQ sponsored Soil Erosion and Sedimentation Control (SESC) training program will be attended by appropriate maintenance staff. Successful completion of the training and certification of stormwater operators will be documented.

ANNUAL REPORTING

· Track total number of staff trained and certified for compliance with Part 31 and Part 91 requirements.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
MDOT Staff Responsible for Administering Part 91 and those having Decision Making Authority for SESC Plan Development or Review, Inspections, or Enforcement will receive NPDES training.	The number of trained staff reported annually to the Stormwater Program Manager

Annual Assessment:
Number of MDOT staff trained, by region:
Bay – 101 SESC, 7 pesticide/herbicide
Grand – 29 SESC recertified
Metro – 5 SESC, 10 pesticide/herbicide, 60 hazard awareness
North – 25 SESC, 9 pesticide/herbicide
Superior – 12 pesticide/herbicide
Southwest – 44 SESC, 16 pesticide/herbicide

Appendix B – Public Involvement and Participation Activities

ACTIVITY PUBLIC INVOLVEMENT 1: POST STORMWATER MANAGEMENT PLAN (SWMP) ON MDOT'S PUBLIC STORMWATER WEBSITE AND DEVELOP COMMENT FORUM

MONITORING YEAR: 2016

Minimum Control Measure : Education/ Outreach **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · EDUCATION 1: Convert Lansing Information Center to Web-Based Stormwater Website

OBJECTIVE

To obtain statewide comments from the public on the SWMP.

DESCRIPTION

Establish procedures for the public notice and distribution of the draft SWMP. Provide at least 30 days for public review and comment.

ANNUAL REPORTING

- Track number of public comments
- Track number of downloads of the draft SWMP from MDOT Stormwater website.
-

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Post draft SWMP on MDOT Stormwater Website.	Posted by due date & confirmed by Stormwater Program Manager.
Annual Assessment: Draft will be posted on the MDOT Stormwater Website in the Spring of 2017.	
Distribute draft SWMP to all TSCs and Region Offices.	Posted by due date & confirmed by Stormwater Program Manager.
Annual Assessment: The draft is to be distributed to the TSC and Region Offices during the Spring of 2017.	
Develop comment forum for general public to comment on publicly posted SWMP.	Posted by due date & confirmed by Stormwater Program Manager.
Annual Assessment: A public comment forum on the MDOT Stormwater Website will be created once the draft SWMP is posted n the MDOT Stormwater Website.	
Distribute SWMP to watershed and environmental organizations listed in **Appendix E** of the SWMP.	Posted by due date & confirmed by Stormwater Program Manager.
Annual Assessment: Once the SWMP is posted on the MDOT Stormwater Website, the organizations listed in **Appendix E** of the SWMP will be notified of its posting.	
Distribute SWMP to planning organizations state-wide that are involved with transportation planning efforts.	Comment on in Annual Report.
Annual Assessment: Once the SWMP is posted on the MDOT Stormwater Website, it will be distributed to these organizations.	

Report and respond to public comments on SWMP.	Relevant comments to be incorporated into final version of SWMP. All comments compiled in SWMP **Appendix F**.
Annual Assessment: As comments on the SWMP are given, they will be documented and responded to through the end of 2017.	
Post final SWMP on MDOT Stormwater Website.	Posted by due date & confirmed by Stormwater Program Manager.
Annual Assessment: By the end of 2017, the final SWMP will be posted on the MDOT Stormwater Website.	

ACTIVITY PUBLIC INVOLVEMENT 2: DEVELOPMENT OF OFFSET PROGRAM INCLUDING PARTNERING WITH OTHER STATE AGENCIES, DRAIN COMMISSIONERS, AND MUNICIPALITES

MONITORING YEAR: 2016

Minimum Control Measure : Education/ Outreach **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting

OBJECTIVE

To expand outreach activities and gain partners to better the management of stormwater by adopting existing stormwater management practices in the state of Michigan and for off-site mitigation for redevelopment projects that cannot meet 100 percent of the performance standards.

DESCRIPTION

MDOT will encourage the partnership with other state agencies, drain commissioners and municipalities, as appropriate, in order to better the management of stormwater and maintain the vitality of Michigan's surface waters.

ANNUAL REPORTING

· List of agencies that have agreed to a partnership, or may be interested in the future.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Develop list of organizations to reach out to by November 2017.	List included in Annual Report.
Annual Assessment: This measurable goal will be a focus for the year 2017. This list will be included in the 2017 Annual Report.	
Develop process for establishing partnerships. SEMCOG partnership to be used as a pilot program.	Standard procedure developed & distributed to appropriate persons by Stormwater Program Manager.
Annual Assessment: This measurable goal is a focus for the year 2018 and will be included in the 2018 Annual Report.	

ACTIVITY PUBLIC INVOLVEMENT 3: IDENTIFY AND COORDINATE WITH MPOs HAVING A SWMP

MONITORING YEAR: 2016

Minimum Control Measure : Education/ Outreach **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · POST CONSTRUCTION 3: Procedure to Select and Apply BMPs · POST CONSTRUCTION 6: Periodically Update Drainage Manual

OBJECTIVE

To identify and coordinate, statewide, with MPOs having stormwater quality control programs to properly handle stormwater management issues during construction and maintenance activities.

DESCRIPTION

Further improve the management of stormwater by collaborating with MPOs during early coordination efforts of MDOT projects. The purpose of these efforts will be to inform and comply with local planning efforts and watershed goals.

ANNUAL REPORTING

- Track the major action environmental documents (environmental assessments and environmental impact statements) distributed to watershed groups for their comments.
- Track responses from watersheds and environmental groups concerning areas of concern.
- Track any early coordination meetings held with watershed and environmental groups including whether groups attend a public meeting or comment on one of the major action documents.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Consider watershed and environmental group input during early coordination of MDOT transportation projects.	In projects identified as impacting 303(d) listed water bodies or other important surface water features, MDOT will coordinate with local watershed and environmental groups.

Annual Assessment: No projects were identified as impacting 303(d) listed water bodies in 2016. This will be an ongoing measurable goal as projects which impact these water bodies are encountered.

Appendix C – Illicit Discharge Elimination Plan Activities

ACTIVITY IDEP 1: MAINTAIN LIST OF CONSTRUCTION PROJECTS AND MAINTENANCE ACTIVITIES

MONITORING YEAR: 2016

Minimum Control Measure : Illicit Discharge Elimination Program Activities **Statewide or Urbanized Area:** Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · IDEP 2: Update Maps for Outfalls in Urban Area · CONSTRUCTION 1: Review QAQC Protocol for Construction Stormwater Runoff Control

OBJECTIVE

To inform interested persons of construction projects and maintenance activities which will include work on the drainage system.

DESCRIPTION

List of construction projects and maintenance activities available to the public through the MDOT website and documented in the Stormwater Annual Report.

ANNUAL REPORTING

· A list of these projects and activities will be made available on the MDOT website.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Develop a list of construction projects and maintenance activities which include work on the drainage system at the end of the fiscal year.	List to be given quarterly from TSC and Region Managers to the Stormwater Program Manager

Annual Assessment: The MDOT public website contains 3 links that list construction projects in the state. The links cover MDOT's major road projects, the current construction projects, and future projects covered under MDOT's 5 year plan. The current construction projects are also available using the Mi Drive application.

ACTIVITY IDEP 2: DEVELOP MAPPING SCHEDULE AND UPDATE MAPS FOR OUTFALLS IN URBAN AREAS

MONITORING YEAR: 2016

Minimum Control Measure : Illicit Discharge Elimination Program Activities **Statewide or Urbanized Area:** Urbanized Area **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · IDEP 1: Maintain List of Active Construction Projects and Major Maintenance Activities

OBJECTIVE

To develop current outfall maps and schedule for updating in the future.

DESCRIPTION

To develop an annual mapping schedule and complete mapping of outfalls in MDOT right-of-way in urbanized areas including MDOT roads crossing 303(d)-listed water bodies and other non-impaired water bodies. Known outfalls will be mapped based on existing survey maps.

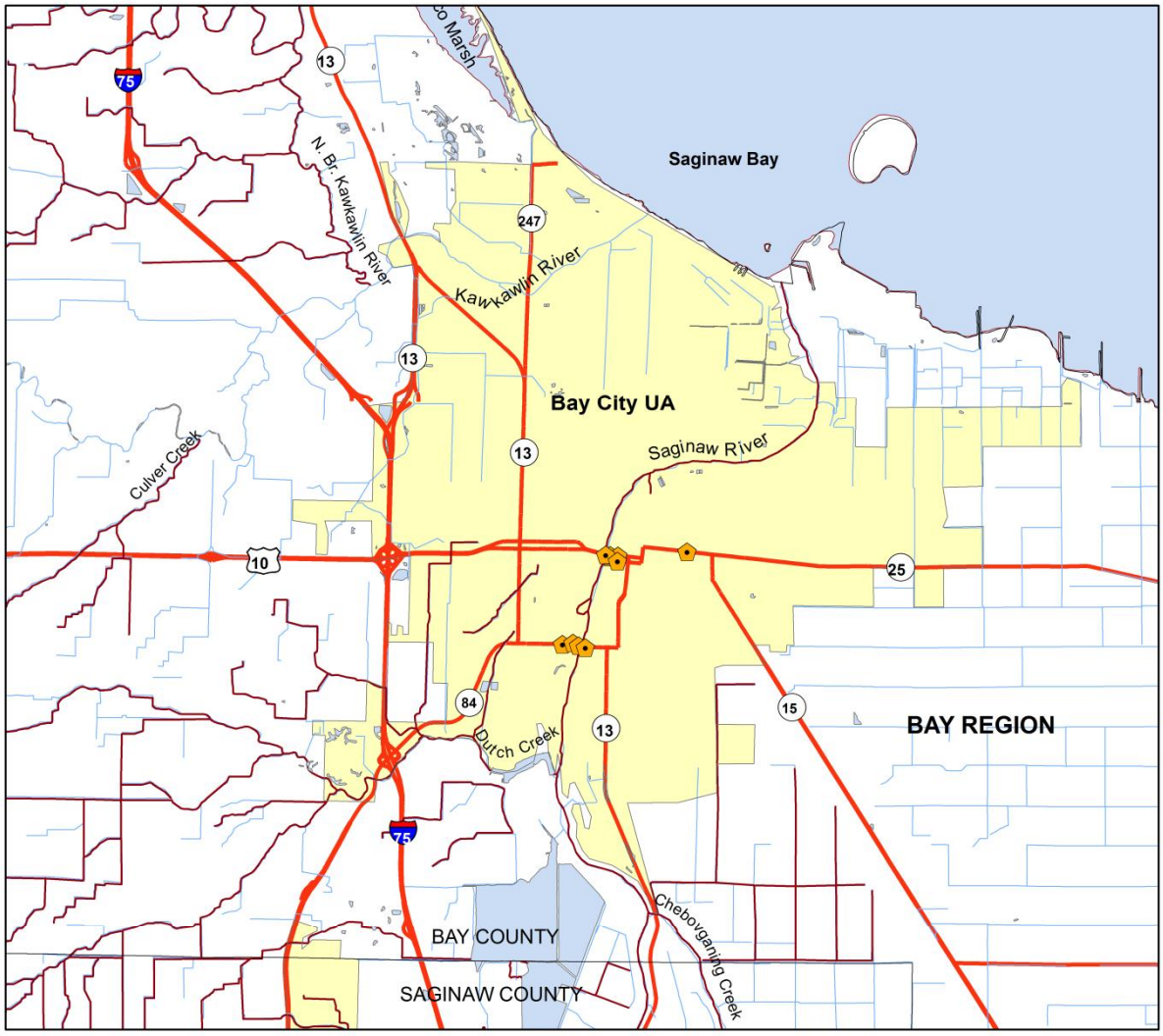
ANNUAL REPORTING

- Track completed maps and updated outfalls
- Report physical location where up-to-date storm sewer system maps are available

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Map outfalls in MDOT right-of-way in urbanized areas.	To be reported annually to the Stormwater Program Manager
Annual Assessment: Maps of outfalls at stream crossings over or within 300 feet of impaired waters of the state within urbanized areas based are on field inspection of top priority outfalls. Maps of outfalls at stream crossings over waters of the state within urbanized areas that are not field screened are based on a GIS analysis.	
Update known outfall maps annually and include in the annual progress report.	Maps given to the Stormwater Program Manager by the consultant annually.
Annual Assessment: Maps created in 2016 are available on the following pages and will be updated throughout the permit cycle as more outfalls are identified.	
MDOT to provide permanent identification for all outfall structures.	ID will be documented and tracked by MDOT Stormwater Program Manager
Annual Assessment: An identification system will be developed in 2017. This system will then be used in subsequent years to easier identify MDOT outfalls.	

Bay City Urbanized Area



Legend

- County Lines
- Impaired Waterbodies
- Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations

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-Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset
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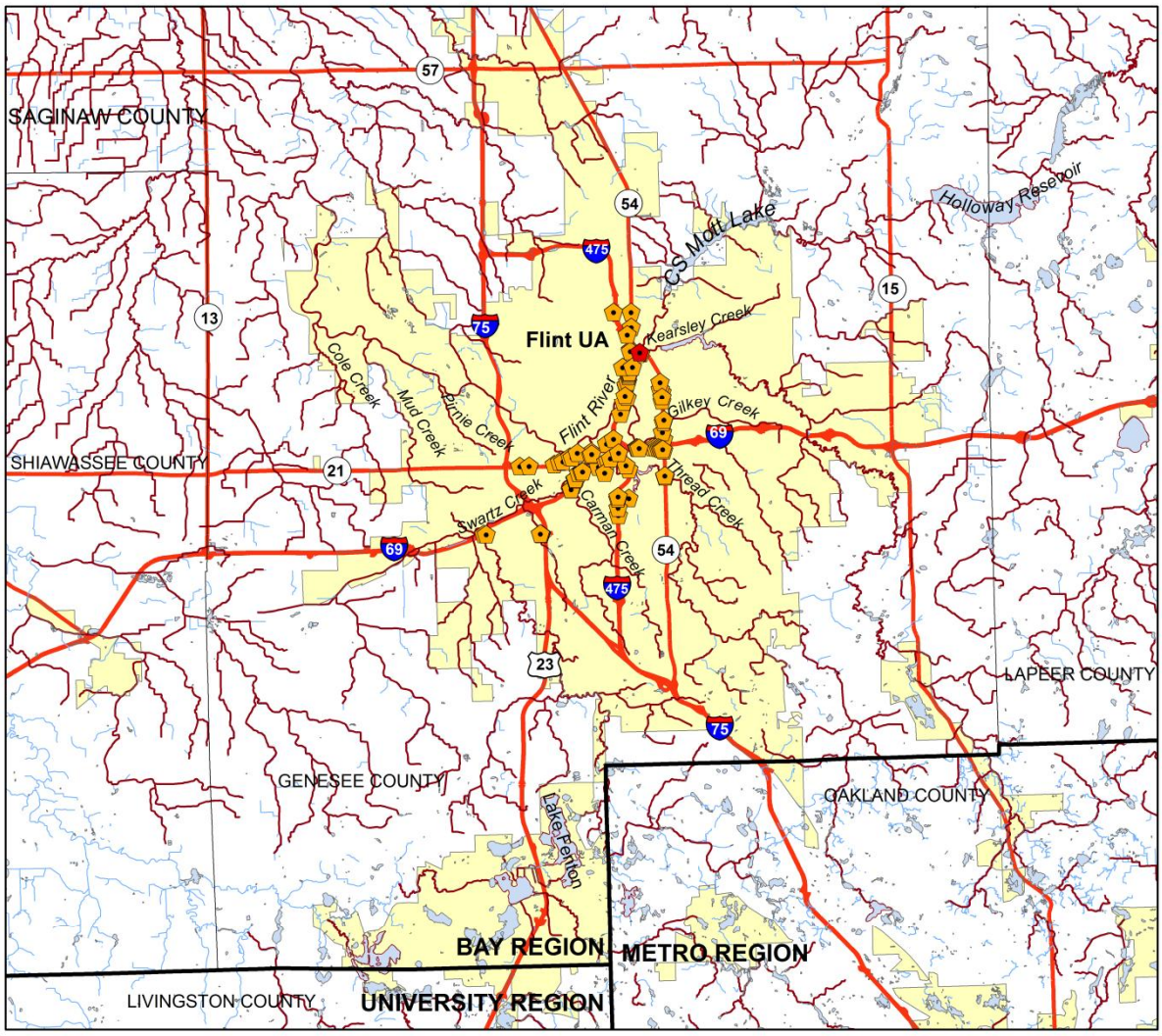
N

0 0.75 1.5 3 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Flint Urbanized Area



Legend

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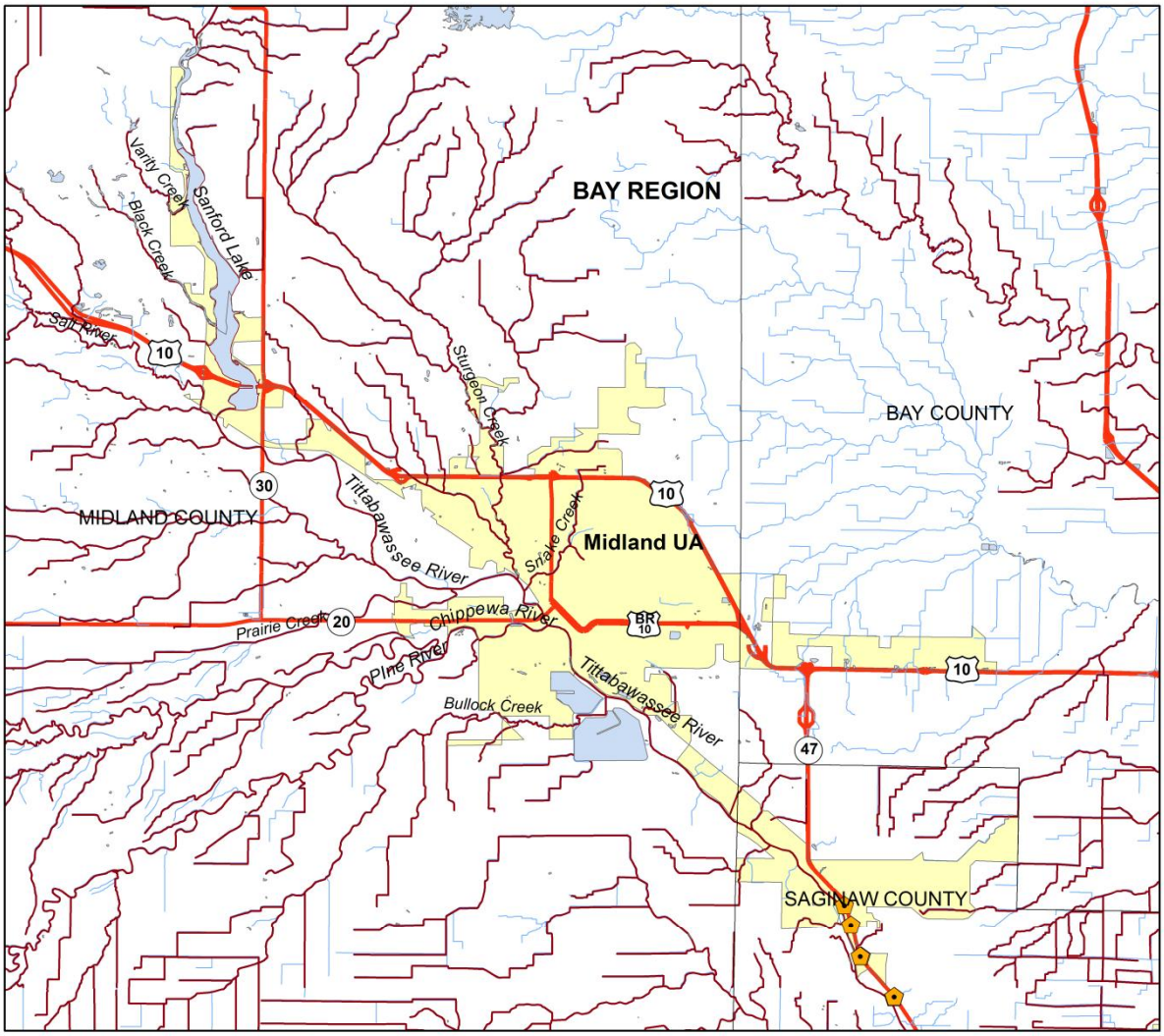
N

0 1.5 3 6 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Midland Urbanized Area



Legend

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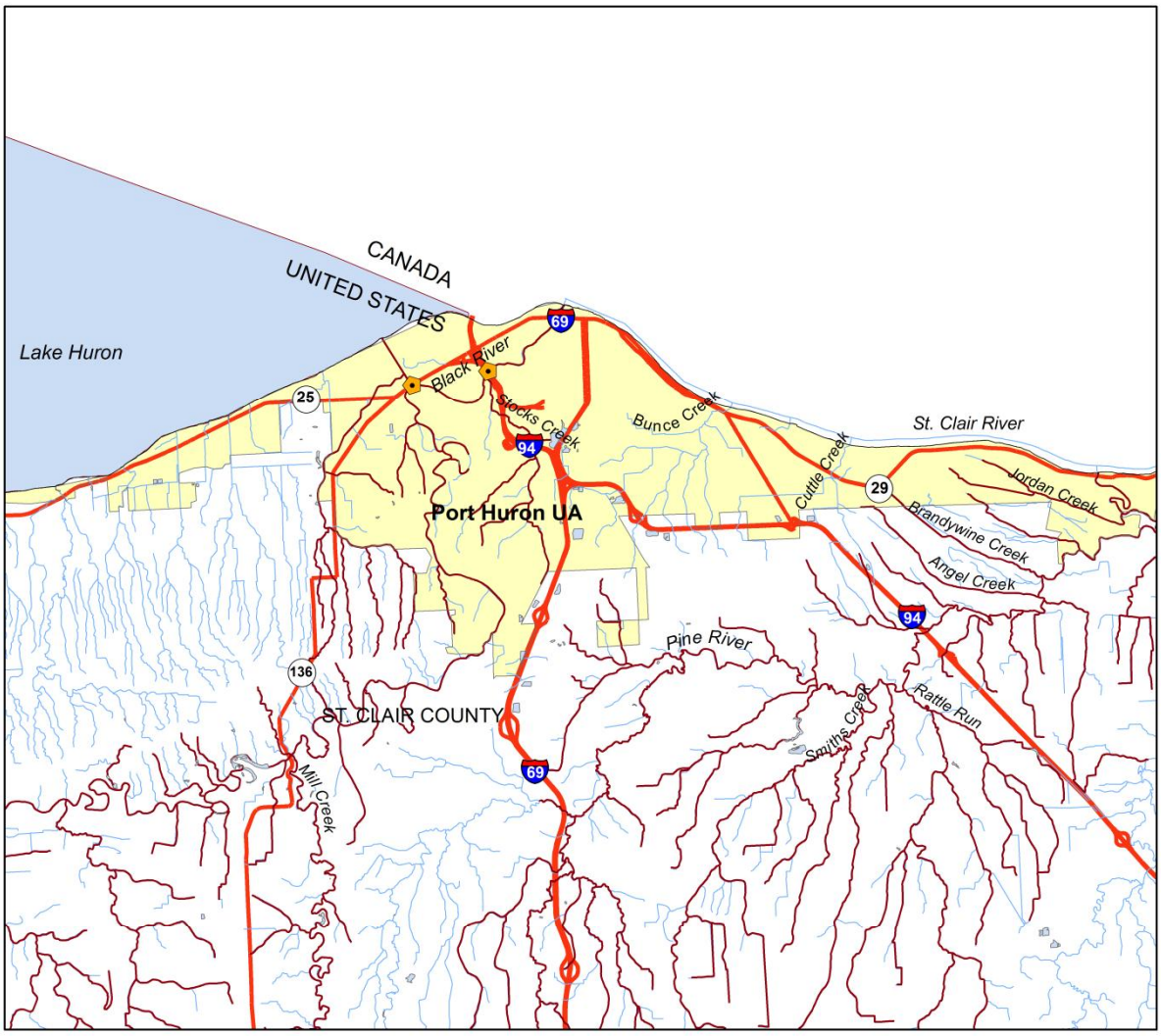
N

0 1.25 2.5 5 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Port Huron Urbanized Area



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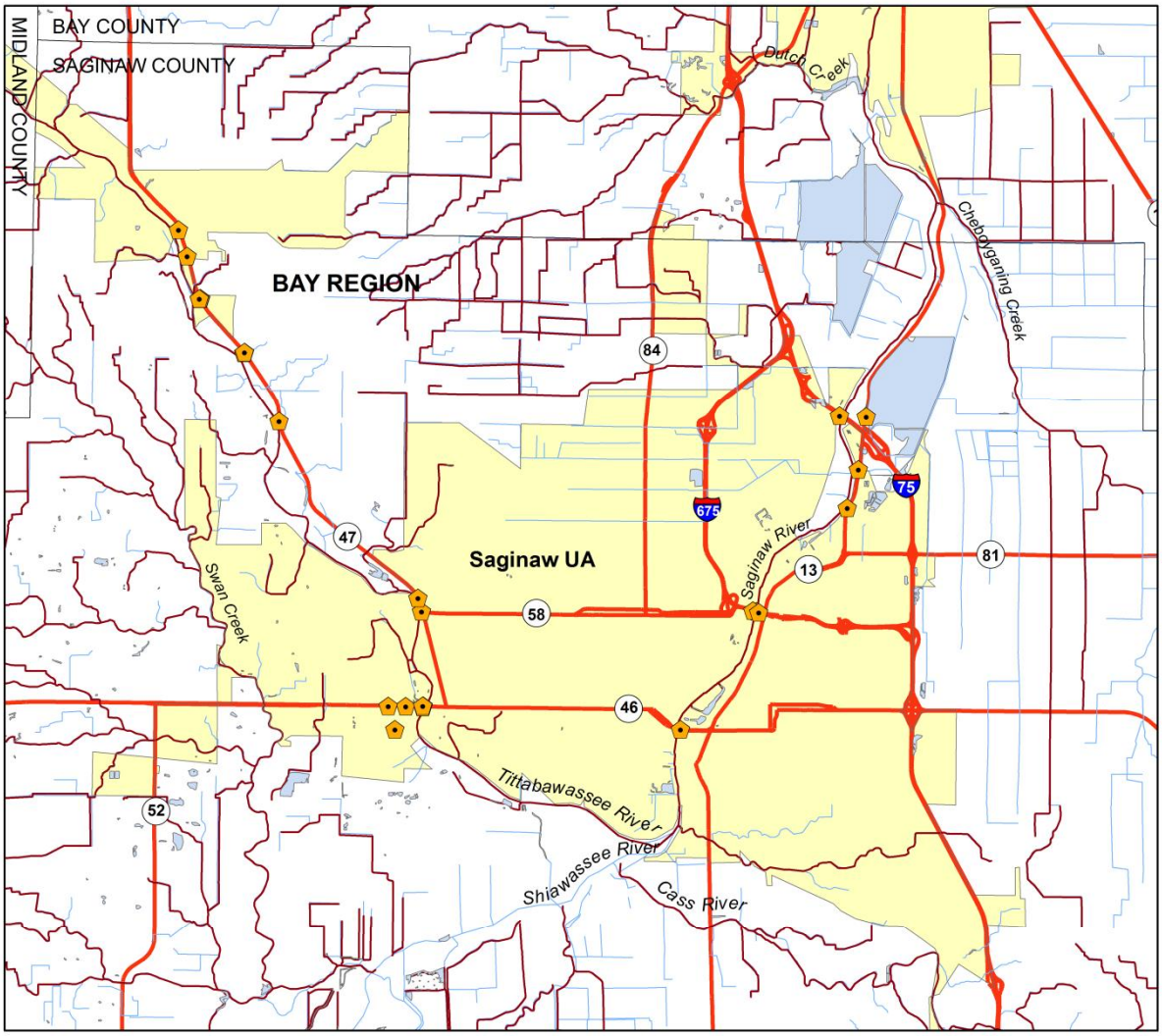
N

0 1 2 4 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Saginaw Urbanized Area



Legend

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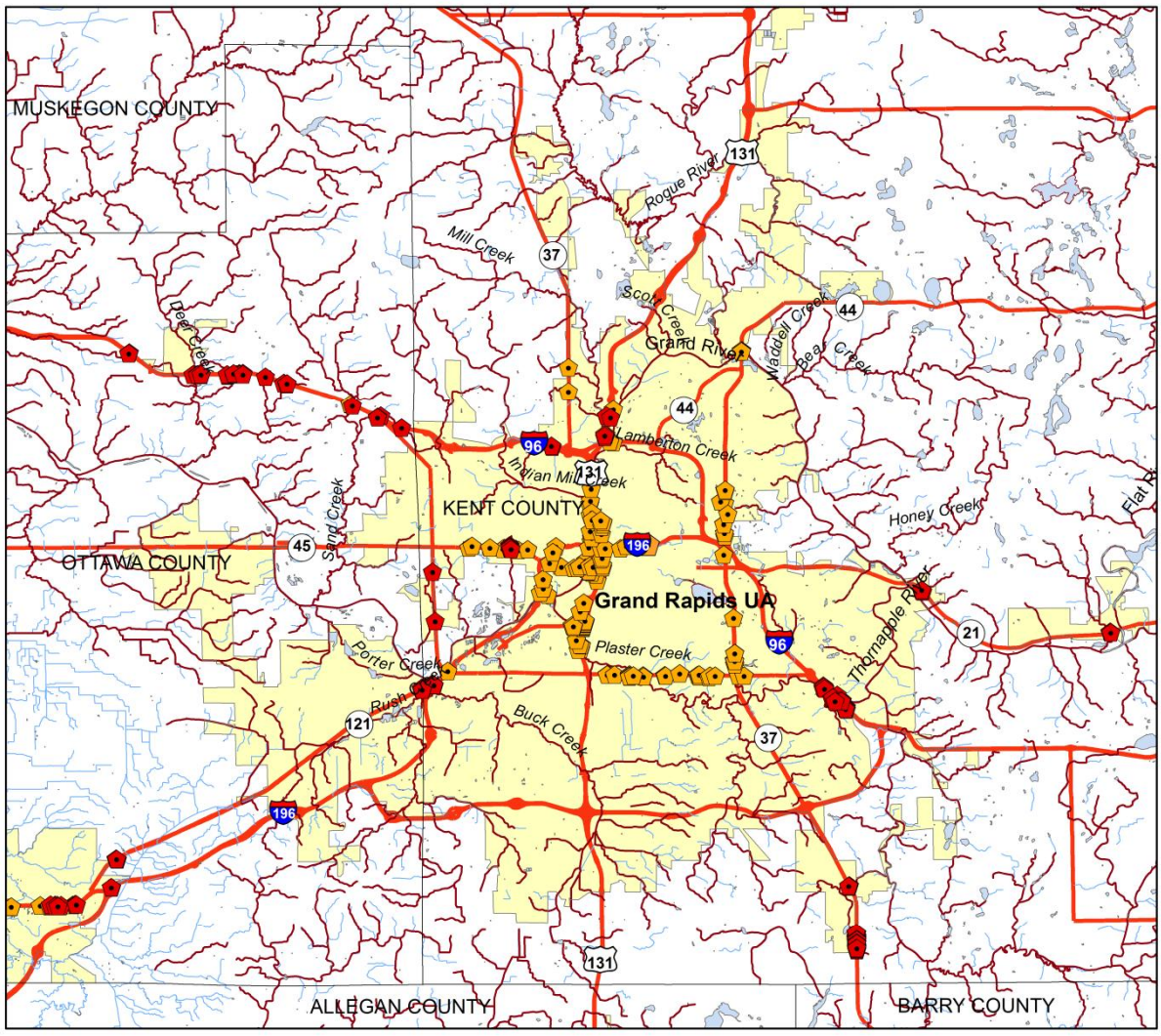
N

0 1 2 4 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Grand Rapids Urbanized Area



Legend

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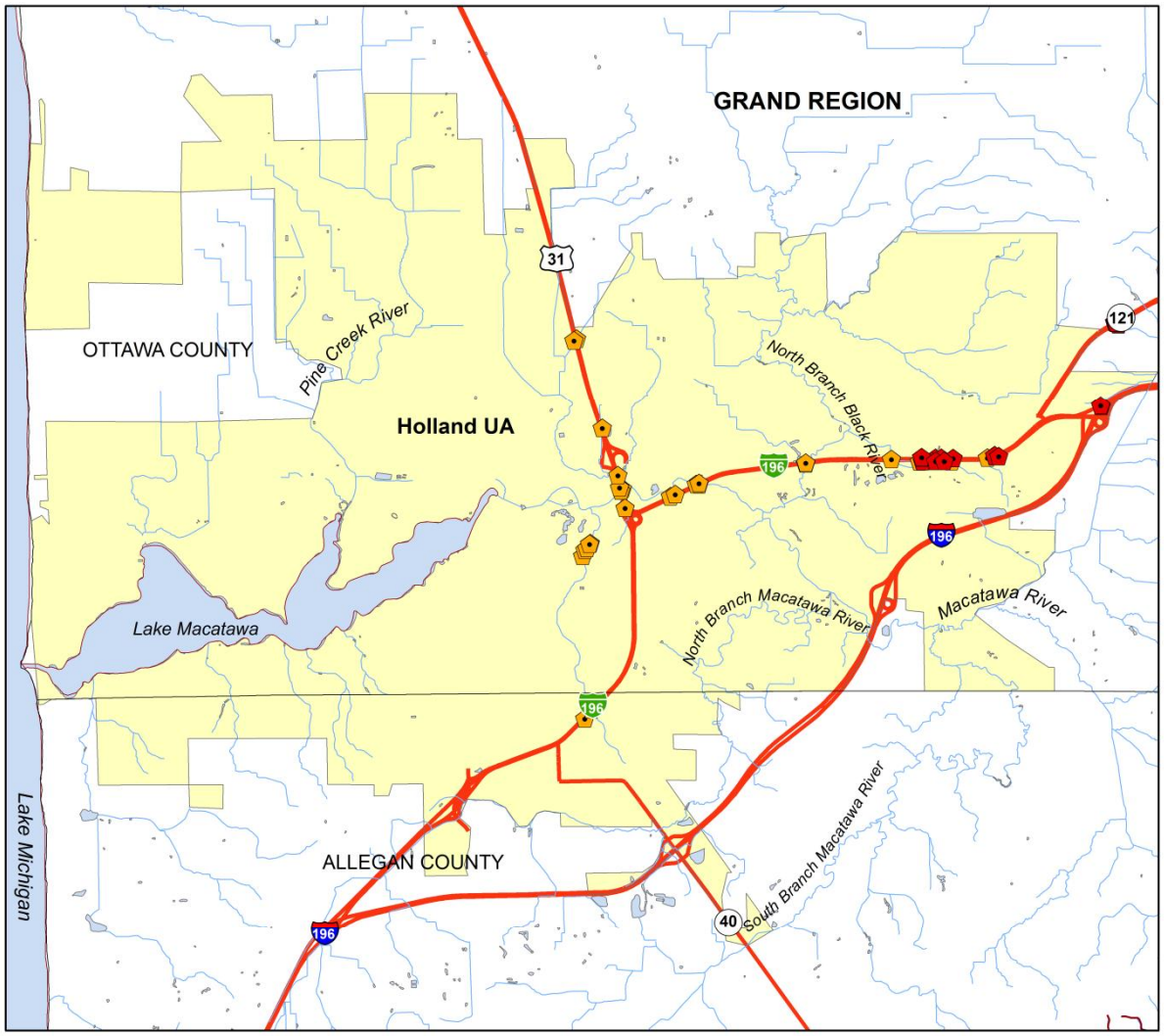
N

0 2 4 8 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Holland Urbanized Area



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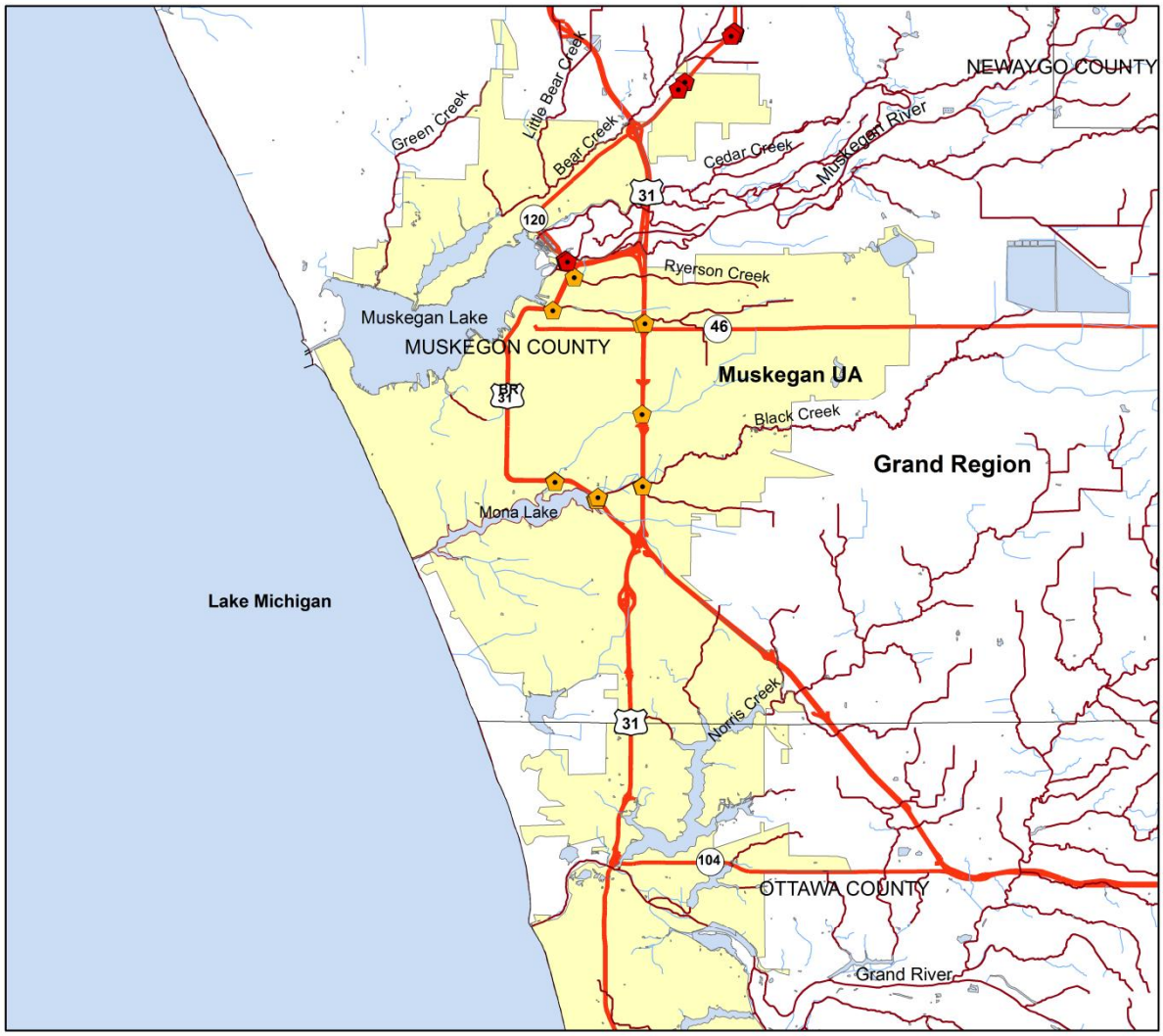
N

0 0.5 1 2 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Muskegon Urbanized Area



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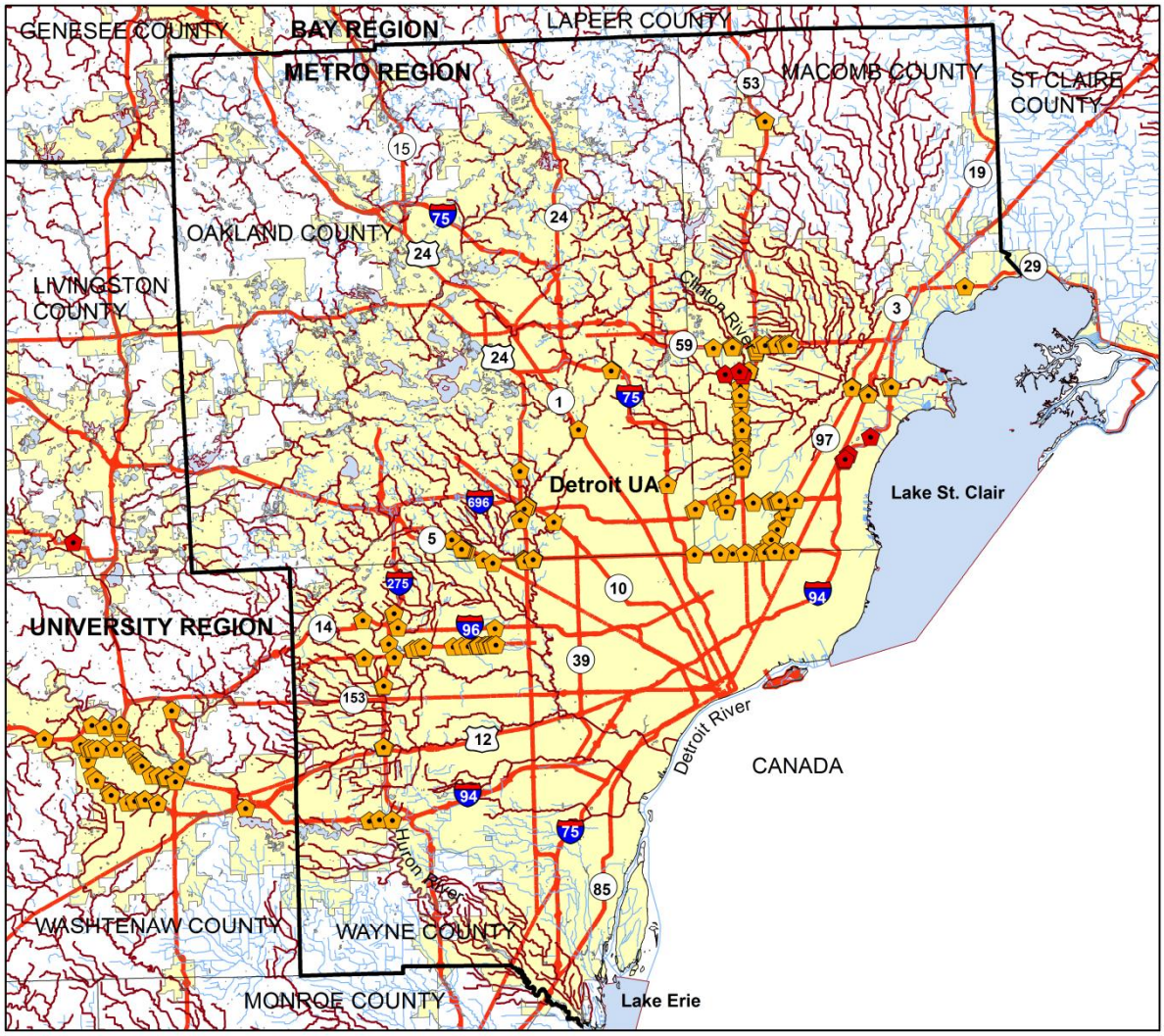
N

0 1 2 4 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Detroit Urbanized Area



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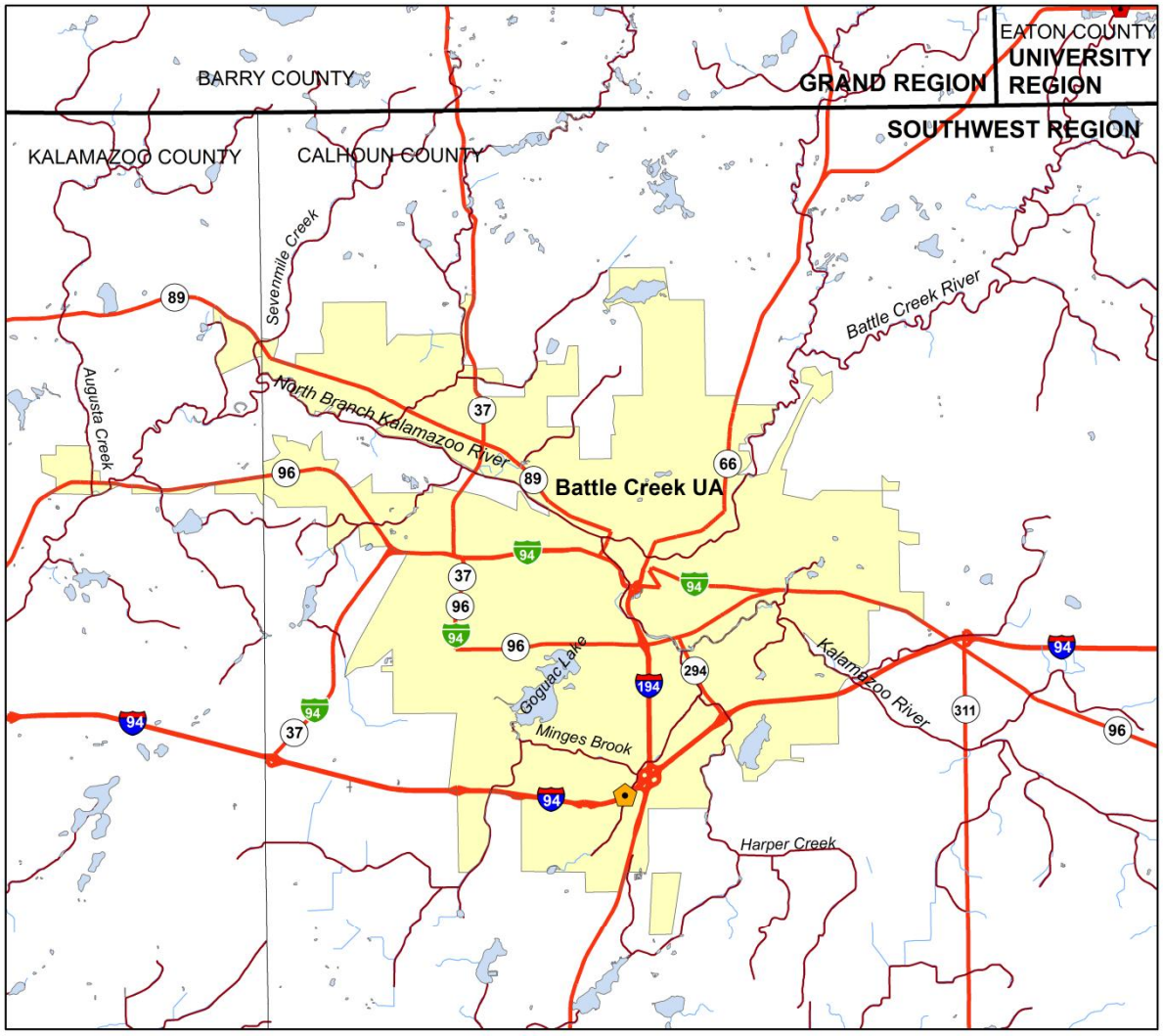
N

0 3.5 7 14 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Battle Creek Urbanized Area



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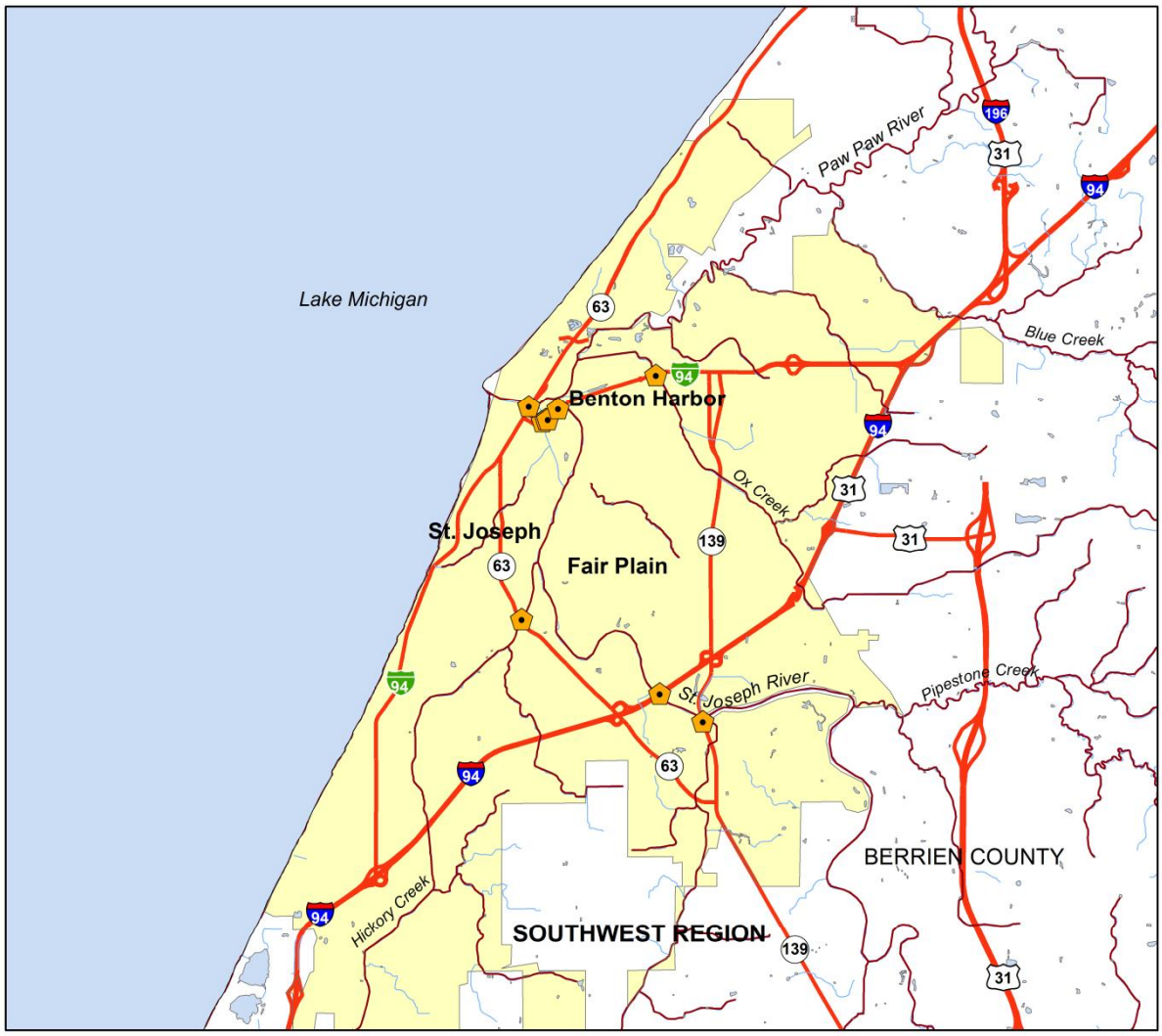
N

0 1 2 4 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Benton Harbor-St. Joseph Urbanized Area



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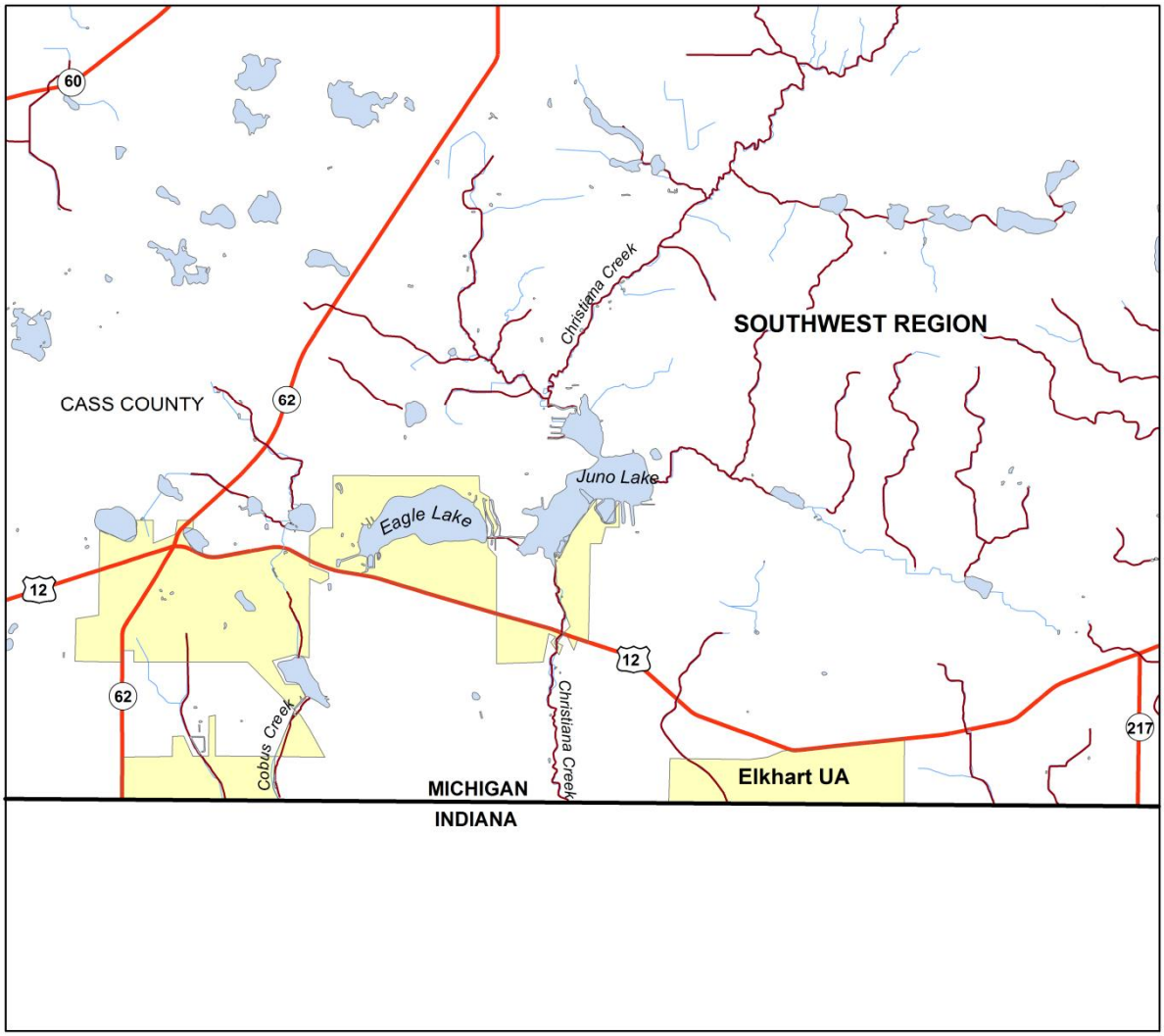
N

0 0.5 1 2 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Elkhart Urbanized Area



Legend

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- Lakes
- MDOT Roads
- Urbanized Area

No IDEP Investigation

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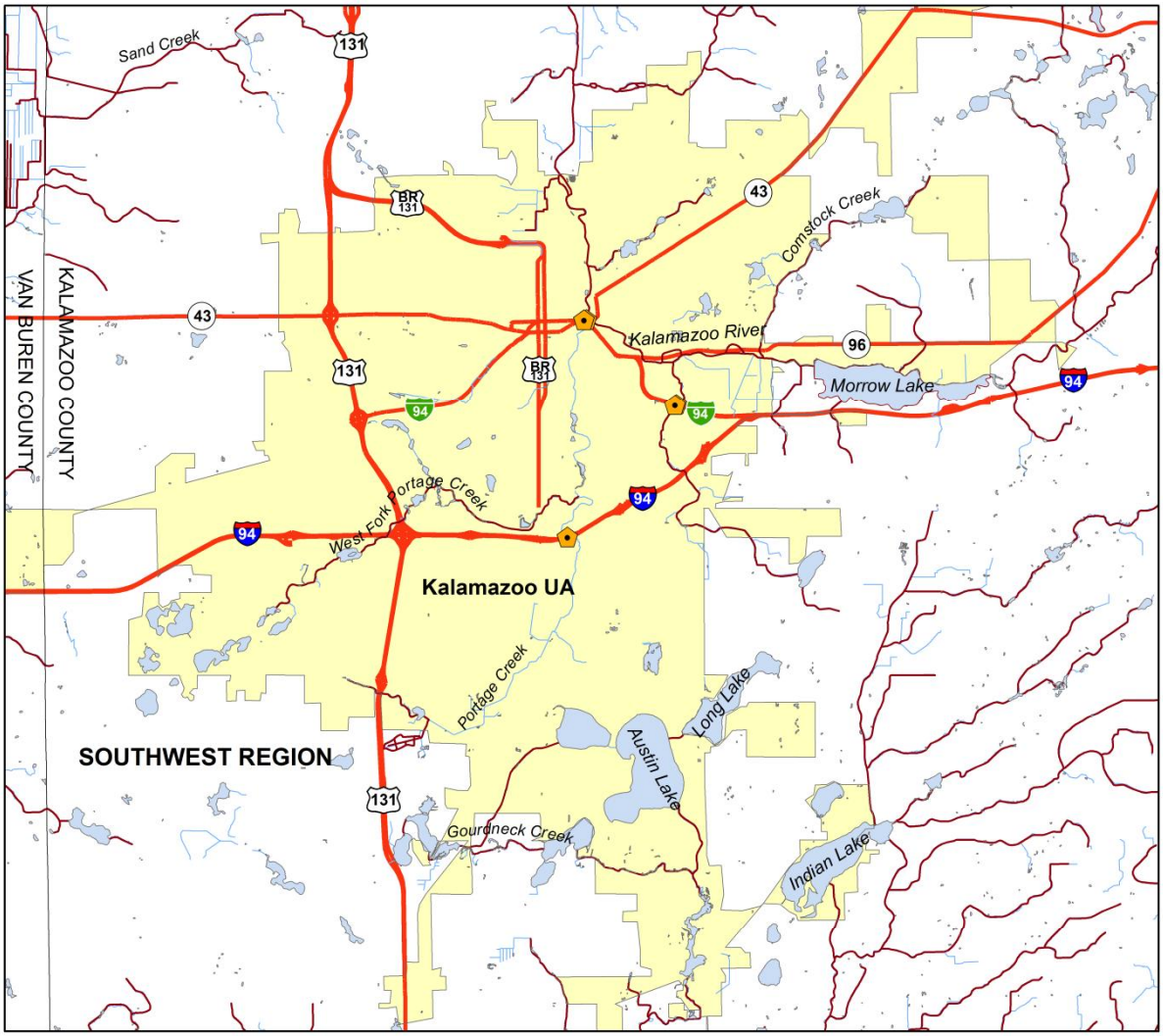
N

0 0.5 1 2 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Kalamazoo Urbanized Area



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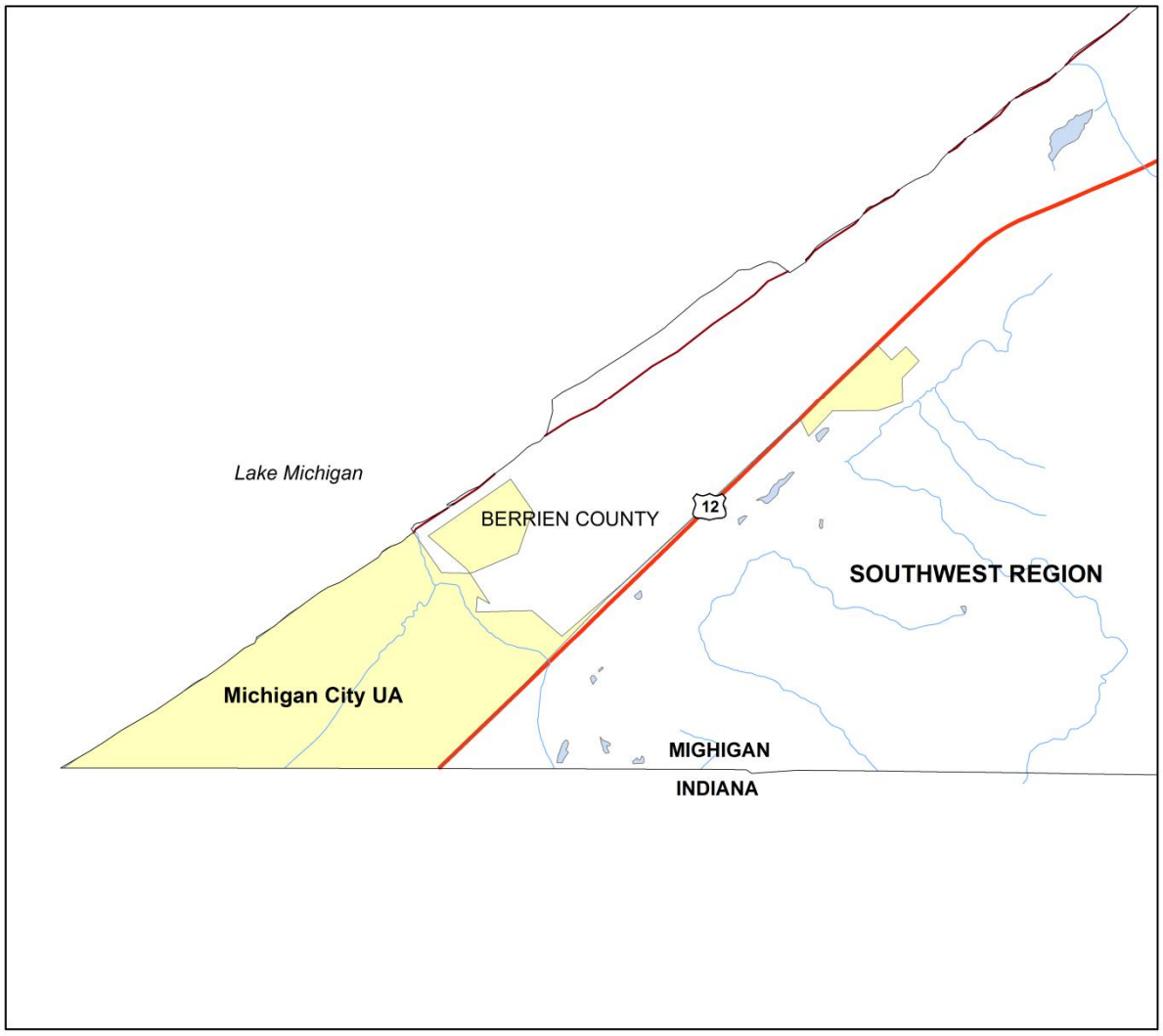
N

0 1 2 4 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Michigan City Urbanized Area



Legend

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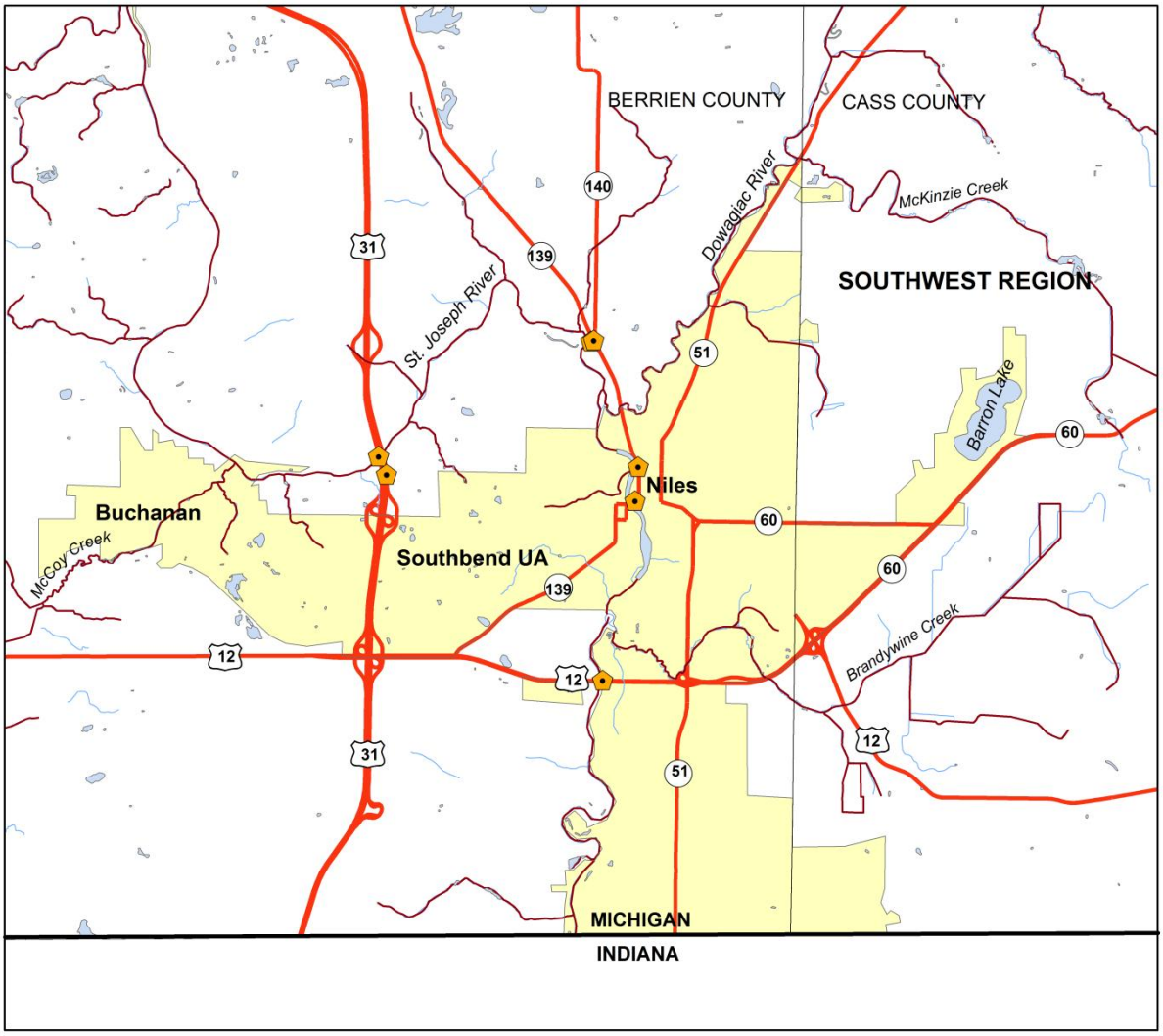
N

0 0.2 0.4 0.8 Miles

Designer: CSM
Date: 6/2/2016

AECOM

South Bend Urbanized Area



Legend

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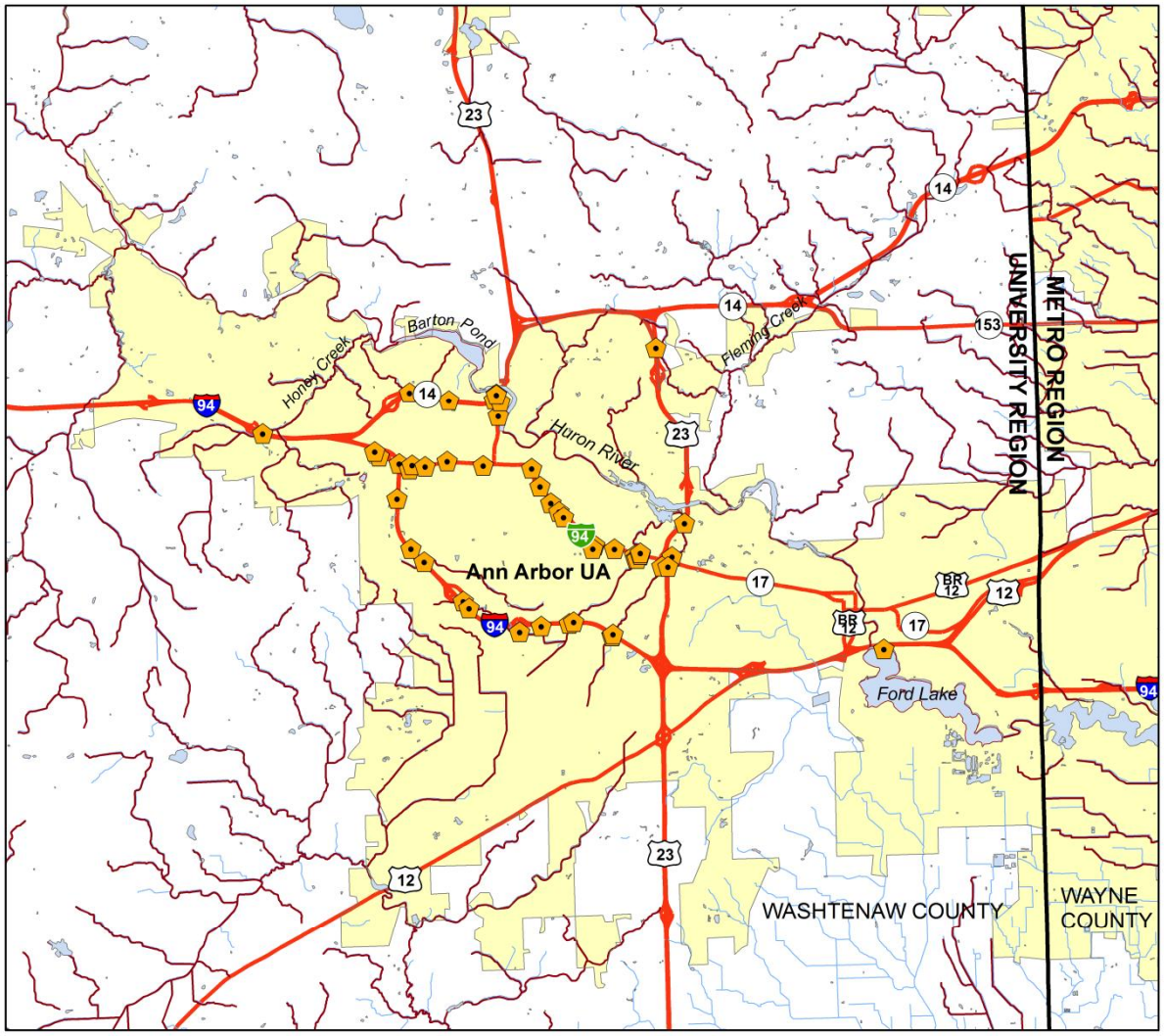
N

0 0.5 1 2 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Ann Arbor Urbanized Area



Legend

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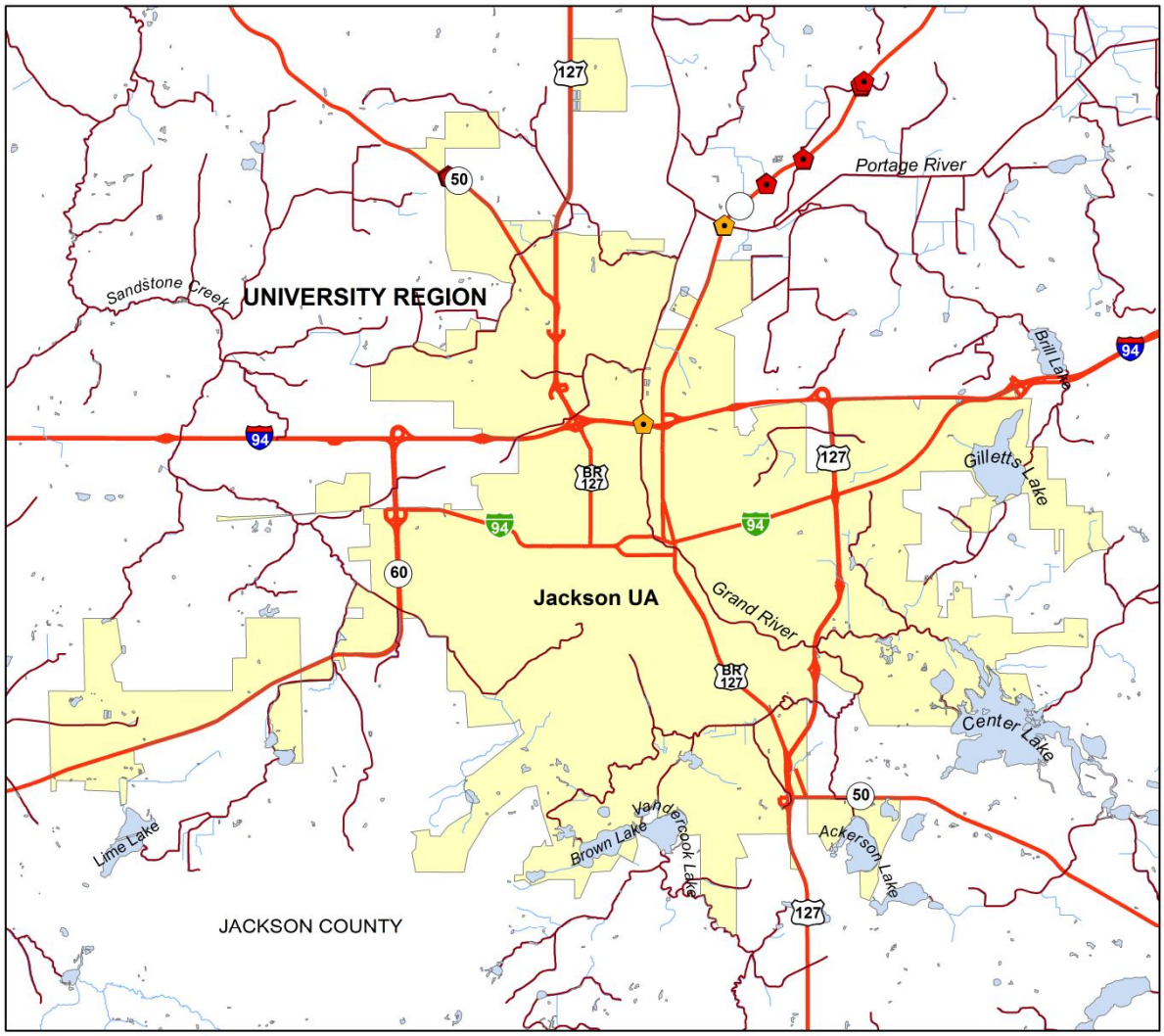
N

0 1 2 4 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Jackson Urbanized Area



Legend

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- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations
- Estimated Outfalls

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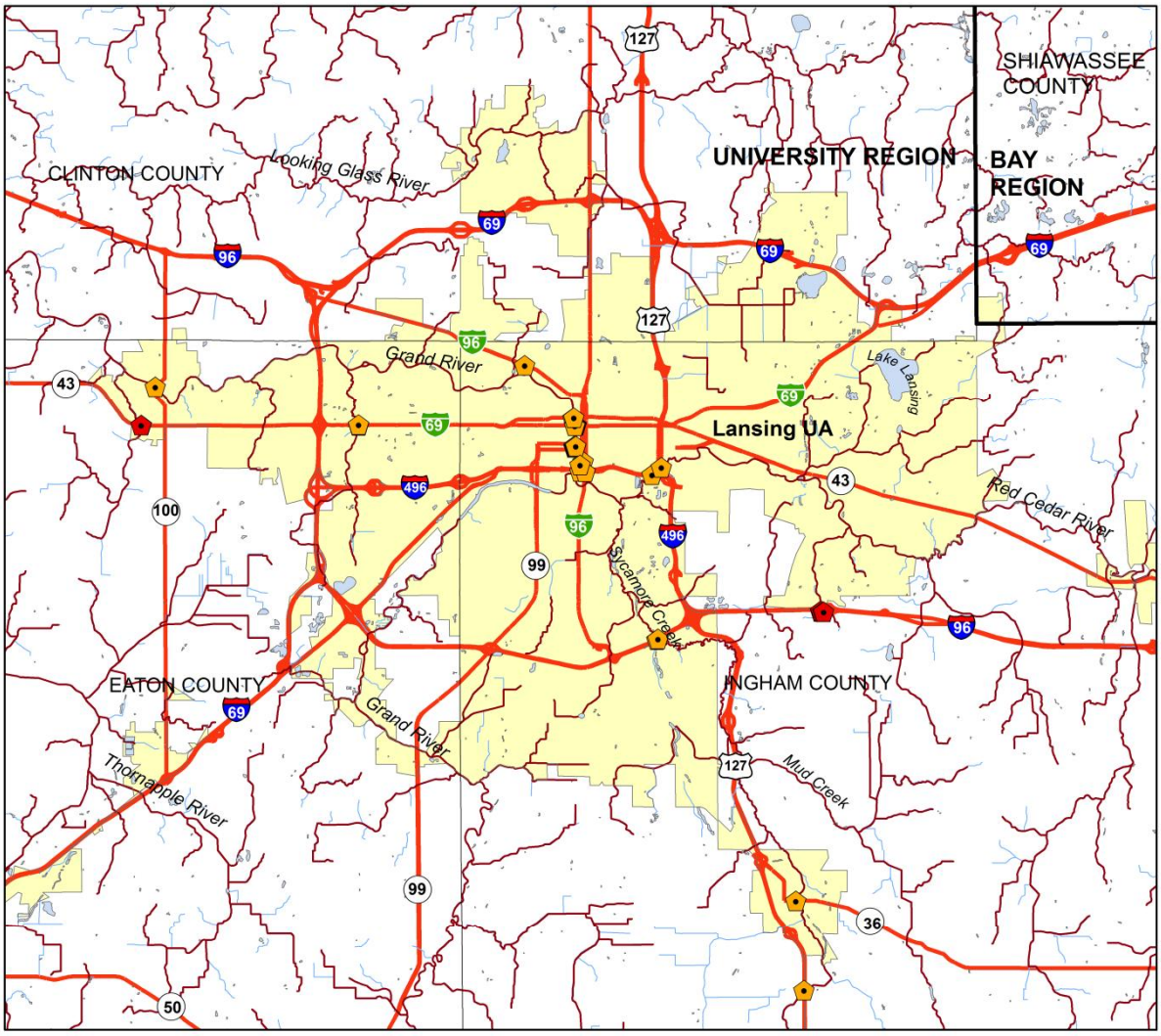
N

0 0.75 1.5 3 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Lansing Urbanized Area



Legend

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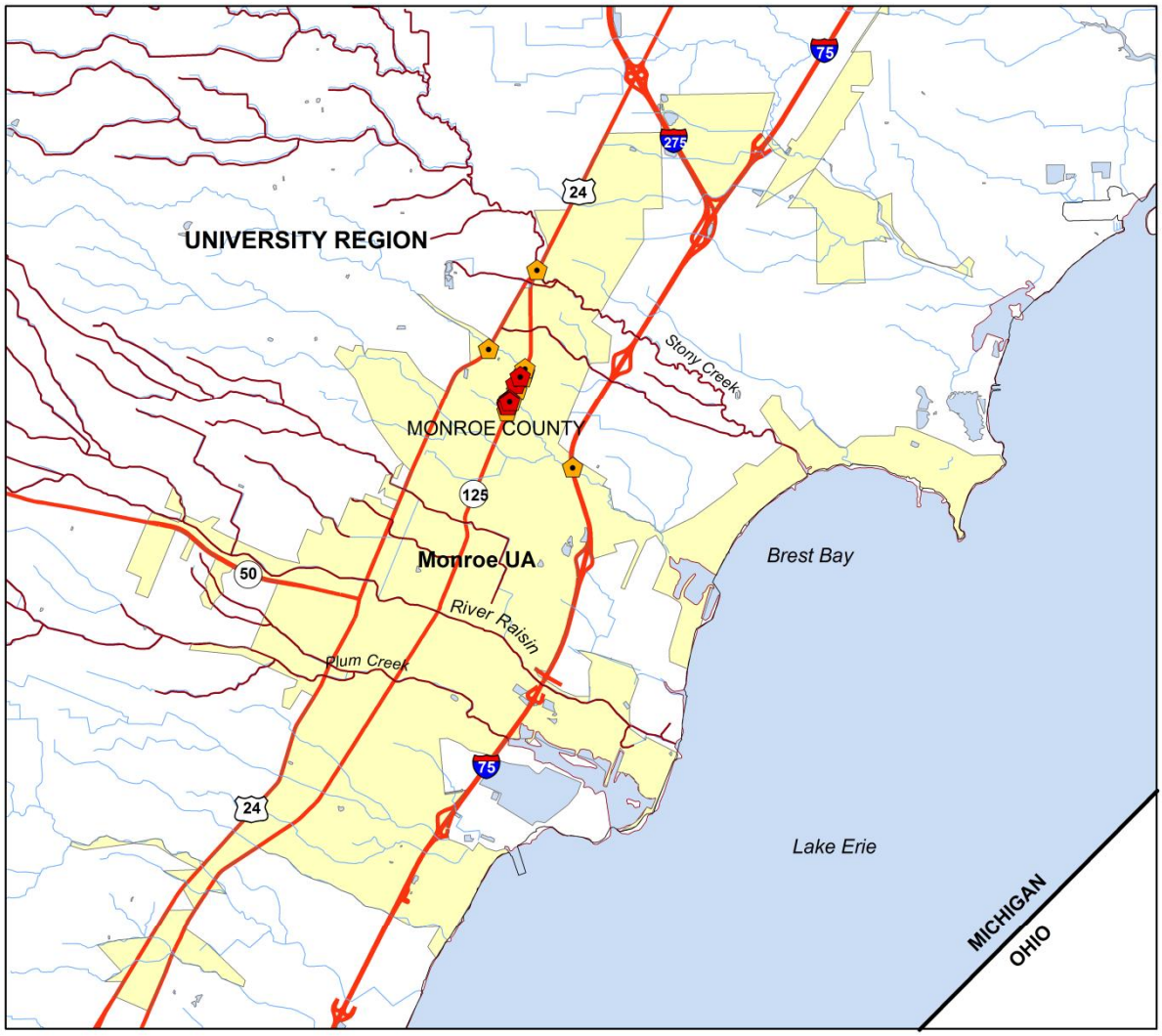
N

0 1.25 2.5 5 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Monroe Urbanized Area



Legend

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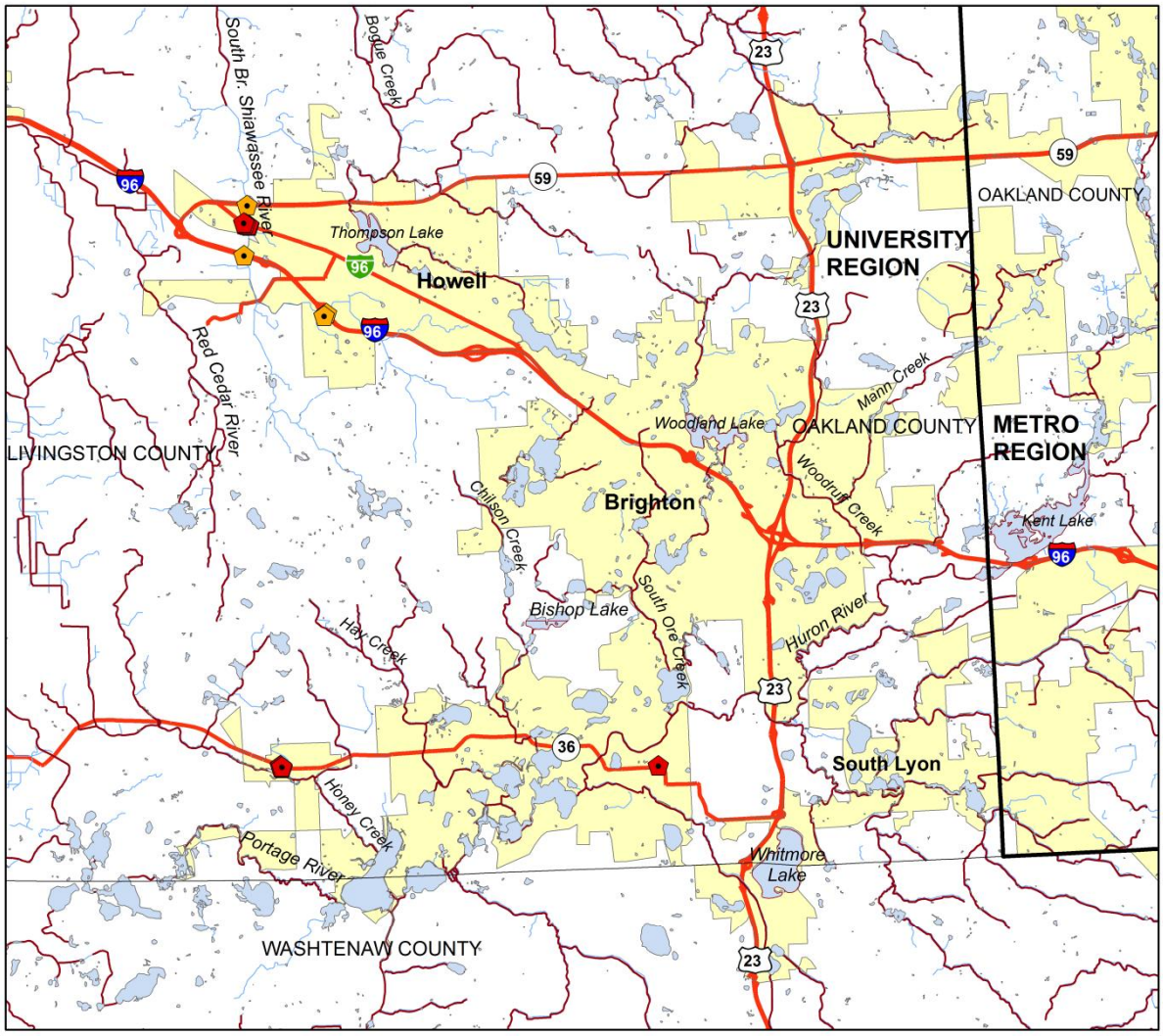
N

0 0.75 1.5 3 Miles

Designer: CSM
Date: 6/2/2016

AECOM

South Lyon-Howell-Brighton Urbanized Area



Legend

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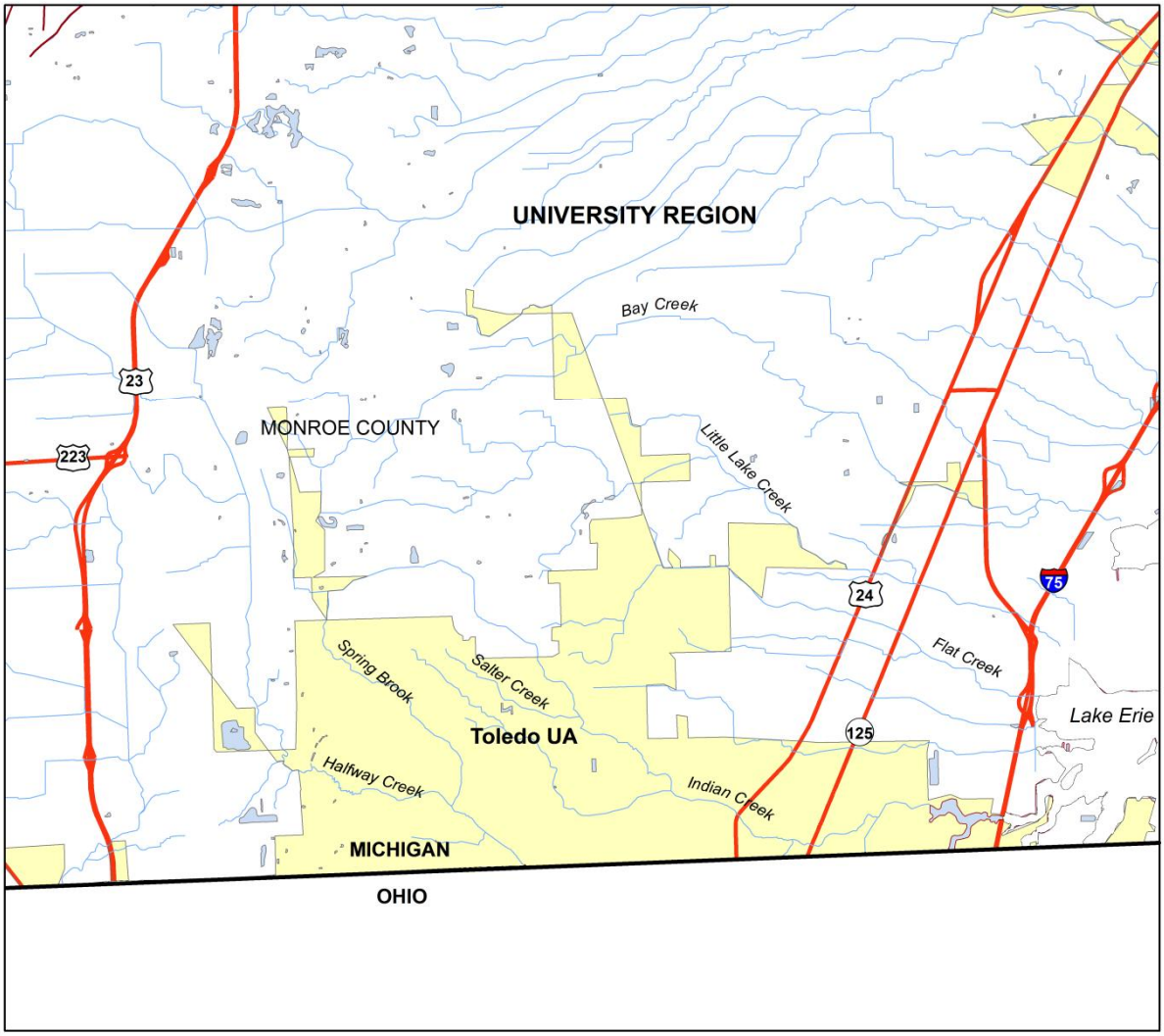
N

0 1 2 4 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Toledo Urbanized Area



Legend

- County Lines
- Impaired Waterbodies
- Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations

-Michigan county line data was obtained from the Michigan Center for Geographic Data Library
-MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library
-Urbanized Area status is based on 2010 census data.
-Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset
-Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library

N

0 0.5 1 2 Miles

Designer: CSM
Date: 6/2/2016

AECOM

ACTIVITY IDEP 3: CONTINUE TO IDENTIFY ILLICIT DISCHARGE CONNECTIONS AND CONDUCT DRY WEATHER SCREENING PILOT PROJECT

Minimum Control Measure : Illicit Discharge Elimination Program Activities
Statewide or Urbanized Area: Statewide
Implemented in Regions: Urbanized Area

Related Activities
- ADMINISTRATION 1: Program Assessment and Reporting
- IDEP 4: Notification of MDEQ of Illicit Discharges
- IDEP 5: Procedure for Determining Effectiveness of the IDEP
- EDUCATION 4: Develop MS4 Training Module for Designers

OBJECTIVE

To identify illicit discharges and connections from the MDOT storm sewer system within 2010 Census urbanized areas as prioritized in the IDEP Plan.

DESCRIPTION

MDOT will continue to identify illicit discharges and illicit connections. This can be done through dry weather screenings. The Red Cedar River Dry Weather Screening project will be used as a pilot program used to determine feasibility of using dry weather screenings to identify illicit discharges and connections.

ANNUAL REPORTING

- Number and location of confirmed outfalls.
- Total number of suspected illicit connections/discharges identified.
- Number and location of manholes tested for each suspected illicit connection/discharge
- Results of sample analysis.
- Description and number of illicit connections/discharges verified.
- Estimated amount and type of pollutant removed.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Follow illicit discharge procedure for 100% of illicit discharges found in order to eliminate illicit connections and discharges.	Follow up with persons who reported illicit discharge to ensure protocol was followed appropriately.

Annual Assessment: Three illicit discharge events took place in 2016:
- Liquid brine spill in the Grand Region at Reed City Maintenance Garage in February. MDEQ was consulted and contaminated soils were removed appropriately.
- Gas leak/spill reported in Metro Region at M-59 and Hickory Ridge. Vehicle overflow resulted in small amount of gas reaching ROW storm drain. MDEQ was consulted.
- A storm sewer in the University Region near Saline River and US-12 was breached when a contractor drove sheeting through it. MDEQ was consulted. Corrective action included turbidity curtain to contain area and sediment removal.

Update MDEQ of the areas selected for dry weather screening.	Updated list of dry weather screenings sent to the appropriate person at MDEQ by the Stormwater Program Manager.

Annual Assessment: This will be a focus in 2017.

Desktop analysis for dry weather screening	Preparing storm sewer maps, stormwater system map, developing dry weather screening procedures
Annual Assessment: The desktop analysis was completed in 2016.	
Review outfalls identified in desktop analysis	Field work such as verification of drainage system components and locating stormwater outfalls.
Annual Assessment: This effort will be a focus for 2017-2020. Before field work begins on the dry weather screening each summer, known outfalls will be reviewed for each area to be investigated each year.	
Results of dry weather screenings will be used to identify and eliminate illicit discharges	The effectiveness of the program will be assessed at the end of the program, in 2020.
Annual Assessment: This effort will be a focus for 2017-2020. As illicit discharges are identified during the dry weather screening, the MDEQ will be notified and the illicit discharge or connection will be resolved.	
The effectiveness of the dry weather screening will be assessed at the end of the first pilot project.	Report to be given to the Stormwater Program Manager at the conclusion of the dry weather screening pilot project
Annual Assessment: This effort will be addressed once the dry weather screening project is finished in 2020.	
Develop a guide on prioritized areas for non-stormwater discharges based on findings from the first dry weather screening pilot project.	Guide to be completed and distributed to relevant MDOT employees and job-related public.
Annual Assessment: This effort will be addressed once the dry weather screening project is finished in 2020	
Develop a plan and schedule for re-inspecting stormwater point sources for the inspection of stormwater point sources in conjunction with the plan to ensure point sources are inspected every five years.	A plan and schedule will be developed with coordination from a consultant and the Stormwater Program Manager. The final plan to be given to the Stormwater Program Manager for implementation.
Annual Assessment: This effort will be addressed once the dry weather screening project is finished in 2020	

ACTIVITY IDEP 4: REVIEW AND UPDATE PROCEDURE FOR RECEIVING AND NOTIFYING MDEQ OF ILLICIT DISCHARGES AND ACTIONS TAKEN

MONITORING YEAR: 2016

Minimum Control Measure : Illicit Discharge Elimination Program Activities **Statewide or Urbanized Area:** Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · IDEP 3: Identify Illicit Connects/ Dry Weather Screening

OBJECTIVE

To receive reports and notify the MDEQ of illicit discharges, statewide, to the MDOT storm sewer system. To take action toward removing these discharges.

DESCRIPTION

Procedure for receiving and responding to reports of illicit discharges is established as part of Section 9.13 of the Construction Permit Manual. Training to effectively implement the procedure will be conducted. Procedure for receiving reports from construction site runoff is already in place as part of the SESC Manual.

ANNUAL REPORTING

- Track the number of notices received and the follow-up actions taken.
- Track the number of illicit connections/discharges identified and removed.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Review the procedure for receiving the notice of an illicit discharge. (As stated in Activity IDEP-3, follow the illicit discharge protocol for 100% of the illicit discharges identified).	A notification of procedure method will be posted on the MDOT Stormwater website.
Annual Assessment: The review is scheduled to be completed in 2018.	
Update procedure for notifying MDEQ of illicit connections and discharges.	The developed procedure will be sent in a notice to appropriate MDOT staff, identified in the responsible party, by the Stormwater Program Manager.
Annual Assessment: The updated procedure is scheduled to be developed in 2018.	

ACTIVITY IDEP 5: DEVELOP PROCEDURE FOR EVALUATING AND DETERMINING THE OVERALL EFFECTIVENESS OF THE IDEP

MONITORING YEAR: 2016

Minimum Control Measure : Illicit Discharge Elimination Program Activities **Statewide or Urbanized Area:** Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · IDEP 3: Identify Illicit Connects/ Dry Weather Screening · IDEP 4: Notification of MDEQ of Illicit Discharges

OBJECTIVE

Develop a procedure that will determine the effectiveness of the IDEP program to effectively eliminate illicit discharges.

DESCRIPTION

A procedure for assessing the effectiveness of the IDEP program will be developed. The procedure will be put in place and evaluated annually.

ANNUAL REPORTING

- Report number of illicit connection and discharge notices and resolutions
- Report trends in the number of notices and resolutions

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Report number of notices and resolutions per year.	Notices to be reported in the Annual Report
Annual Assessment: Three illicit discharges were reported in 2016 and are summarized in the IDEP 3 Activity Table.	
If any feedback on the program is given through stormwater contacts provided on the MDOT website, they will be forwarded to the Stormwater Program manager to compile in an archive. This archive can be monitored over time to determine the evolving comments and effectiveness of the program.	Stormwater contacts to forward any feedback on the stormwater program to the Stormwater Program Manager
Annual Assessment: No feedback was received in 2016.	

Appendix D – Post Construction Stormwater Management Activities

ACTIVITY POST CONSTRUCTION 1: UPDATE MAP OF KNOWN STRUCTURAL BMPS AND DEVELOP PROCESS FOR TRACKING NEW STRUCTURAL BMPS

MONITORING YEAR: 2016

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINSTRATION 1: Program Assessment and Reporting · POST CONSTRUCTION 2: Review and Update BMP Maintenance Requirements

OBJECTIVE

To develop a more complete map of the existing BMPs in Michigan and a system for reporting newly constructed BMPs.

DESCRIPTION

A map containing the most up to date BMPs installed in Michigan & system for tracking newly installed BMPs.

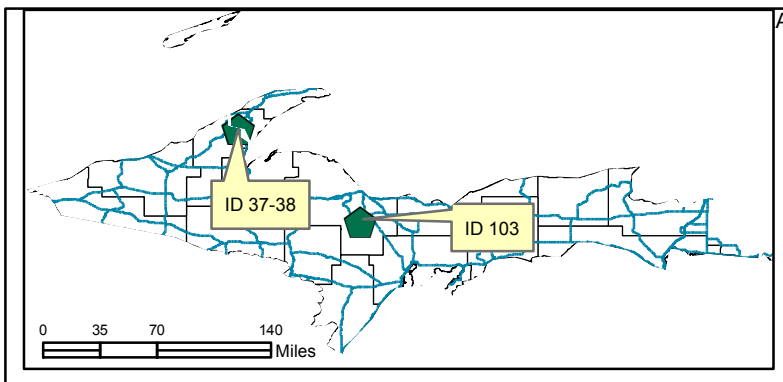
ANNUAL REPORTING

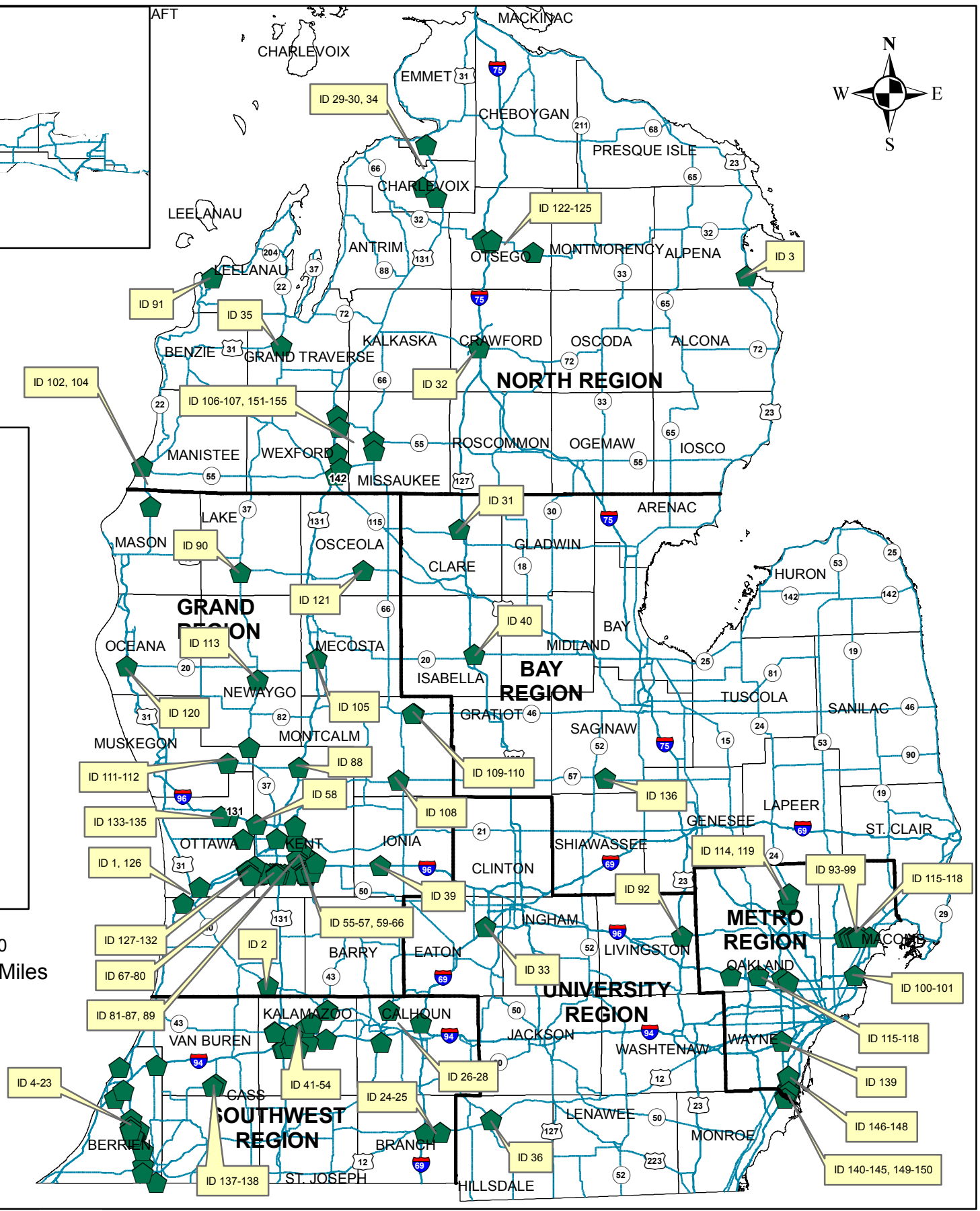
- Newly constructed BMPs to be included in the annual report.
- Updated map of known BMPs

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Develop map of all known BMPs in the state	Map will appear in the Annual Report
Annual Assessment: A map of all BMPs in the state was compiled in 2016. This map has been updated to reflect BMPs that were constructed in 2016 and reported to the storm water program manager to compile the annual report. The map is available on the following page.	
Develop form of means for communicating newly constructed BMPs to the Stormwater Program Manager	Form to be distributed to all TSC Region offices by the Stormwater Program Manager.
Annual Assessment: This measurable goal will be a focus for 2017.	
Newly constructed BMPs will be submitted using the developed form to the Stormwater Program Manager.	Form given to the Stormwater Program Manager by the TSC Region Managers on an annual basis. New BMPs to be listed in the Annual Report.
Annual Assessment: New BMPs that were constructed in 2016 have been identified in the attached table.	
Update map of known BMPs in the state	Map will appear in the Annual Report
Annual Assessment: The most recent version of the BMP map is available on the following page.	

Post Construction Structural BMP Locations





Legend

- MDOT Region Divide
- County Line
- MDOT Route
- Interstate
- US Highway
- State Highway
- BMP

* Numbers on points correspond to ID numbers of BMPs listed in the table below for reference

0 25 50 100 Miles

ID	Location Description	BMP Description
1	US-31 S. of Washington Ave. in Median	Detention Basin
2	M-89 at 800 ft W of Jefferson Avenue (500 ft E of Kalamazoo River)	Separator Chamber
3	US-23 at Nicholson Hill Rd. in SW quadrant	Detention Basin
4	M-139 over St Joseph River Bridge	Rain Gardens
5	I-94 over St. Joseph River in SE quadrant	Detention Basin
6	I-94 @ Napier Ave.	Detention Basin
7	I-94 @ Mill Race Creek in SW quadrant (2000 ft east of M-140)	Drop Structure
8	US-31 St. Joseph River in NE quadrant	Detention Basin
9	US-31 BR @ Woodlawn & Church St. (N of State Line)	Detention Basin
10	US-31 @ Old US-31 in SE quadrant	Detention Basin
11	M-63 @ NE quadrant of Maple Ln. (2000 ft north of Maple Ln)	Drop Structure
12	US-31 @ Niles-Buchanan Rd in SE quadrant	Detention Basin
13	US-31 @ Lake Chapin Rd in SW quadrant, Station 740	Detention Basin
14	US-31 @ Lake Chapin in SE quadrant, Station 753	Detention Basin
15	US-31 @ Lake Chapin in NE quadrant, Station 767	Detention Basin
16	US-31 @ Snow Rd in ESE quadrant, Station 780	Detention Basin
17	US-31 @ Snow Rd in WNW quadrant, Station 789	Detention Basin
18	US-31 N. of Shawnee Rd, Station 862	Detention Basin
19	US-31, Station 507 (US-12 to State Line)	Detention Basin
20	US-31, Station 539	Detention Basin
21	US-31, Station 616	Detention Basin
22	US-31 @ Lemon Creek Tributary in NE quadrant S of Old US-31 on E side	Detention Basin
23	US-31 @ Lemon Creek Tributary in SE quadrant S of Old US-31 on E side	Detention Basin
24	US-12 (150 ft S) at 1000 ft W of Lake Blvd in Quincy	Detention Basin
25	I-69 @ US-12	Retention Basin
26	M-66 at Beckley Rd in SE Quad	Detention Basin
27	M-66 at Pennfield Road in NE Quad	Sediment/Infiltration Basin
28	I-69 SB at Turkeyville Rest Area (2000 ft S of L Dr N)	Rain Garden
29	M-75 @ Boyne Industrial Park on NE side of road	Infiltration Swale
30	US-131 BR (Stretches across the whole County?)	Retention Basin
31	US-127 BR (M-61 to US-127)	Infiltration
32	I-75 BR at Au Sable River in Grayling	Vegetative Ditch & Leaching B
33	I-69 @ Billwood Hwy in SE quadrant	Detention Basin
34	Northbound US-131, south of Lears Rd. in Petoskey	Retention Basin
35	M-37, 1500 feet south of Beitner Rd west side of M-37	Detention Basin
36	US-12 @ Oak St in SE quadrant (City of Jonesville)	Retention Basin
37	Cemetery Rd in City of Houghton	Detention Basin
38	US-41 near City of Houghton	Drop Structure
39	EB I-96 Rest Area 1 Mile Sign	Detention Basin
40	M-20 @ US-127 in NE quadrant of ramp	Pump Station & Retention
41	US-131 at I-94 in median N of I-94 (Portage Creek West Fork)	Detention Basin
42	I-94 WB at Galesburg Rest Area (2500 ft west of 35th St.)	Retention Basin
43	I-94 at Sprinkle Road in NE Quad	Detention Basin
44	I-94 at 12th St in NW Quad	Detention Basin
45	I-94 at 700 ft W of Lovers Lane on N side	Detention Basin
46	I-94 at US-131 in NW Quad	Detention Basin
47	I-94 at US-131 W of SW Quad	Detention Basin
48	I-94 at Oakland Dr in NE Quad	Detention Basin
49	M-43 @ Nazareth in SW quadrant	Detention Basin
50	I-94 BR (Stadium Dr) at Michigan Ave in N Quad	Infiltration Basin
51	M-43 @ 8th in NW quadrant	Retention Basin
52	M-43 @ 8th in SE quadrant	Retention Basin
53	M-43 @ 26th Street SE quadrant	Retention Basin
54	M-89 at 34th Street SW Quad	Infiltration Basin
55	I-96 at 36th St in Median-S of 36th St Ramp	Detention Basin with Forebay
56	I-96 at 36th St in SE Quad	Detention Basin with Forebay
57	I-96 at Forest Hill Ave in SW Quad	Retention Basin
58	I-96 between Fruit Ridge Ave and 8th Ave in Median	Infiltration Basins (2)
59	M-37 at 500 ft south of 32nd St west side	Detention Basin
60	M-37 @ Plaster Creek in SW quadrant (250 ft N of 44th Street)	Retention Basin
61	M-37 at 600 ft NW of Patterson Ave (NW quadrant of Fisk Drain)	Retention Basin
62	M-37 between 60th St and Patterson Ave-South	Detention Basin (wet bottom)
63	M-37 at M-6 WB On-Ramp - North Side	Detention Basin (wet bottom)
64	M-37 between 68th St and M-6 - West Side	Detention Basin (wet bottom)
65	M-37 N. of Fulton St. - Church Lake Drain	Weir
66	M-44 at 0.35 mile north of 3 Mile Rd. on west side	Detention Basin
67	M-6 at Wilson Ramp C in SW Quad	Detention Basin (wet bottom)
68	M-6 at Wilson Ramp B in SE Quad	Detention Basin (wet bottom)
69	M-6 at 2000 ft east of Burlingame Ave - South Side	Detention Basin
70	M-6 at 700 ft West of Ivanrest - North Side	Detention Basin (wet bottom)

ID	Location Description	BMP Description
71	M-6 at Clyde Park Ave in NW Quad	Infiltration Basin
72	M-6 east of Byron Center Ave Ramp B	Detention Basin (wet bottom)
73	M-6 at Byron Center Ave Ramp C in SW Quad	Detention Basin (wet bottom)
74	M-6 at Kent Trails-West of Byron Center Ramp C	Detention Basin
75	M-6 at 64th Street	Detention Basin
76	M-6 at US-131 Ramp D in NW Quad	Retention Basin
77	M-6 at US-131 Ramp A in NE Quad	Detention Basin
78	M-6 near Division Ave-North side	Detention Basin (wet bottom)
79	M-6 near Eastern Ave	Detention Basin (wet bottom)
80	M-6 at Kalamazoo Ave Ramp A in NE Quad	Detention Basin and Infiltratio
81	M-6 at M-37 Ramp C in SW Quad	Infiltration Basin
82	M-6 at M-37 Ramp B in SE Quad	Detention Basin with Two For
83	M-6 at M-37 Ramp D in NW Quad	Infiltration Basin
84	M-6 at 60th St in NW Quad	Detention Basin (wet bottom)
85	M-6 at I-96 Interchange	Det. Basin/Overflow Drop Stru
86	US-131 at M-6 ramps and Buck Creek	Detention Basin and Retentio
87	US-131 at ramp C/R in SW quadrant	Retention Basin
88	US-131 at M-46 in NE quadrant	Detention Basin
89	I-196/US 131 Interchange Ramps, Corner of Third and Turner Street	Rain Garden
90	M-37 @ Lake Street in Baldwin (125 feet east of intersection)	Vortech
91	M-22 (M-109 to M-204) (Glen Arbor Pump Station)	Retention Basin
92	US-23 @ M-59 in NE quadrant	Detention Basin
93	M-59 at Elizabeth St. in the median (at N. Branch Clinton River)	Detention Basins (2)
94	M-59 at Snover Rd.	Infiltration Basin
95	M-59 at Hayes Rd in median W of Hayes	Detention Basin
96	M-59 @ Garfield Rd (Feiblecorn Drain)	Detention Basins (3)
97	M-59 at Ronnen Dr. in median east and west of Crittendon Drain	Detention Basins (2)
98	M-59 at Rivergate Dr. in median (Middle Branch of Clinton River)	Detention Basins (2)
99	M-59 at Heydenreich Rd. in median (east & west of road) (Nicol Drain)	Detention Basins (2)
100	M-59 at Macomb Center Dr in median (Miller Drain)	Detention Basin
101	I-696 at Elm St. (I-696, Lake St)	Oil/Gas Separator
102	US-31 (approx. 1200 ft N of Quincy St {111 Arthur St})	Vortech
103	M-35 from Iron St to Slate Alley in Gwinn, MI	Infiltration Trenches
104	US-31 S of Sauble Dr (N & S of Big Sable River)	Sedimentation Basins and Pa
105	US-131 at Old State Rd in NE quadrant (South of Muskegon River)	Retention Basin
106	M-66 @ Randall Rd in SW quadrant (300 ft W of M-66)	Infiltration Basin
107	M-66 Lake City	Detention Basin
108	M-57 west of Derby Rd. EB near Beth Haven Church (1158 W Carson City Rd)	Detention Basin
109	M-46 East of Edmore 11th Street	Detention Basin
110	M-46 East of Edmore Neff Road	Detention Basin
111	M-46 west of Trent Rd. across from Moss Ridge Golf Club (13329 Apple Ave)	Detention Basin
112	M-37 south of Newaygo Co. Line (NB)	Detention Basin
113	M-37 south of 16th St. (NB and SB)	Retention Basins (2)
114	M-24 between Harmon Road and Golden Gate Road	Bioswales, Energy Dissapatic
115	I-696, River Rouge	Pump Station
116	I-96 at Beck Rd. (south side of I-96)	Detention Basin
117	M-10 and Northwestern Hwy., McKinley Drain	Infiltration Basin
118	I-696, Minnow Pond Drain	Swale Retrofit
119	M-24 at Paint Creek (Paint Creek Infiltration Basin)	Infiltration Basin
120	US-31 at Hayes in SE quadrant	Retention Basin
121	US-10 @ Cedar St in SE quadrant (SW quadrant with Twin Creek and W of Chemical Basin Divert)	Detention Basin
122	I-75BR @ Grandview Blvd (1500 ft E of I-75BR & S side of Grandview)	Detention Basin
123	M-32 W of Meecher Rd (behind Monte's Car Wash {1377 W Main})	Detention Basin
124	M-32 S of Johannesburg (W side of M-32 across from high school)	Detention Basin
125	M-32 @ Hayes Rd (2000 ft SE of intersection / E of 5th St cul-de-sac)	Detention Basin
126	Bus I-196 at Paw Paw in SW quadrant	Detention Basin
127	I-196 at Kenowa Ave in NW quadrant	Detention Basin (wet bottom)
128	M-6 at I-196 median ramp D & C	Detention Basin
129	M-6 at I-196 median ramp C & B	Detention Basin
130	M-6 at I-196 median ramp A & D	Detention Basin
131	M-6 at 8th Ave. ramp C in SW quadrant	Det Basin and Det (wet bottor
132	M-6 at 8th Ave. ramp B in SE quadrant	Detention Basin
133	M-45 @ Sand Creek Dr (west of Sand Creek)	Retention Basin
134	I-96 at 48th Ave. in SE quadrant	Infiltration Basin (2)
135	I-96 east of 68th Ave. south side of I-96	Detention Basin
136	M-57 over Shiawassee River	Rain Gardens
137	M-51 at Edger Bergen Blvd. in SW quadrant	Retention Basin
138	M-51 at 250 ft SW of N Mills St on N side	Retention Basin
139	I-94 @ US-24 (Telegraph Rd) in SW quadrant	Detention Basin
140	I-75 @ Gibraltar Rd NW basin in Flat Creek, MI	Detention Basin

ID	Location Description	BMP Description
141	I-75 @ Gibraltar Rd NE basin in Flat Creek, MI	Detention Basin
142	I-75 @ Gibraltar Rd SW basin in Flat Creek, MI	Detention Basin
143	I-75 @ Gibraltar Rd SE basin in Flat Creek, MI	Detention Basin
144	I-75 @ (North) Huron River Dr NW Basin in Rockwood, MI	Detention Basin
145	I-75 @ (North) Huron River Dr NE Basin in Rockwood, MI	Detention Basin
146	I-75 @ West Rd SW Basin Adjacent to Ramp in Woodhaven, MI	Detention Basin
147	I-75 @ West Rd SW Basin in Woodhaven, MI	Detention Basin
148	I-75 @ West Rd NE Basin in Woodhaven, MI	Detention Basin
149	I-75 and M-85 @ Woodruff Rd in Rockwood	Detention Basin
150	I-75 @ South Huron River Dr in Rockwood, MI	Detention Basin
151	US-131 at 12 3/4 Rd in NW quadrant	Detention Basin
152	US-131 @ Mackinaw Trail in NW quadrant	Detention Basins (3)
153	US-131 at 18 1/2 Rd in NE quadrant	Infiltration Basin
154	``	Detention Basin (wet bottom)
155	US-131 at M-55 in SW quadrant	Infiltration Basin

Design: MLC
3/20/2017

AECOM

Table D1: 2016 BMP Construction Projects			
Region	Location	Type	Description
Bay	JN 113234, M-57 Chesaning Rain Garden	Permanent	Bridge replacement project designed with rain gardens to capture and filter stormwater runoff.
Grand	JN 112464, US-131 NB (6 Mile Road to 13 Mile Road)	Temporary	Silt fence, check dams and sediment traps.
	JN 1152009, M-46 (Northland Drive to US-131)	Temporary	Silt fence and sediment traps for road widening.
	JN 126857, White Pine Trail Bridges over Tamarack & Rice Creeks	Temporary	Silt fence, sediment traps and check dams installed for bridge replacements.
	M-37 & Peach Ridge Road	Permanent	24-inch culvert rehabilitation project
	M-37 at Church Lake	Permanent	Stormwater velocity reduction.
Metro	JN 108096, M-24	Various	Project involved more than 80 extra deep sumps, 400 feet of energy infiltration ditch and 6,000 square feet of bioswales.
	JN 11447A, Ecorse Road Streetscape (Allen Park DDA project)	Permanent	Road streetscape included a series of biocells and planters, and a reduction in hardscape.
North	M-66 in Lake City	Permanent	Storm sewer redesign including addition of a retention basin to prevent first flush from entering Lake Missaukee.
Southwest	JN 104152, M-139 at St. Joseph River	Permanent	Rain garden installed in 2015 with planting completed in 2016 for bridge replacement project.
	JN 120469, Riverside Drive at BL-94	Permanent	Lane addition project involved 4-ft deep catch basin sumps due to proximity to Kalamazoo River.

ACTIVITY POST CONSTRUCTION 2: REVIEW AND UPDATE MAINTENANCE REQUIREMENTS FOR MDOT BMPS

MONITORING YEAR: 2016

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · POST CONSTRUCTION 1: Update Map of Structural BMPs · POLLUTION PREVENTION 4: Track Road Maintenance Activity

OBJECTIVE

To protect receiving water quality statewide by reviewing and updating maintenance requirements for permanent MDOT-approved BMPs.

DESCRIPTION

Updated procedures for the continued maintenance of BMPs.

ANNUAL REPORTING

· Discuss updates to the maintenance requirements

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Review Maintenance Performance Guides and update accordingly.	Develop recommendations based on the review. To be given to the Stormwater Program Manager and documented in the Annual Report.
Annual Assessment: This measurable goal will be a focus for 2018.	
Develop and implement procedures for maintaining permanent BMPs not already having a maintenance procedure.	Newly developed procedures will be documented by the Stormwater Program Manager
Annual Assessment: This measurable goal will be a focus for 2018.	
Develop and implement a procedure for maintaining permanent BMPs after acceptance of BMP for use on MDOT projects	Newly developed procedures will be documented by the Stormwater Program Manager
Annual Assessment: For each new BMP constructed in 2016, a maintenance procedure was developed on a site specific basis.	
Notify appropriate staff of changes to guides.	Notification to be sent out to the appropriate staff via email as needed.
Annual Assessment: As guides are created/updated, appropriate staff will be notified.	
Maintain existing permanent BMPs according to existing MDOT procedures.	BMPs will be inspected every 5 years by a consultant to ensure proper maintenance.
Annual Assessment: BMPs are maintained according to the maintenance plans and are inspected on a rotating five year basis. In 2016, 27 BMPs were inspected to ensure proper maintenance.	

ACTIVITY POST CONSTRUCTION 3: DEVELOP PROCEDURE TO SELECT AND APPLY BEST MANAGEMENT PRACTICES (BMPs) FOR STORM WATER MANAGEMENT ACTIVITIES (POST-CONSTRUCTION) AND IMPLEMENT PROCEDURES
MONITORING YEAR: 2016

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINSTRATION 1: Program Assessment and Reporting · POST CONSTRUCTION 1: Update Map of Known Structural BMPs and Develop Process for Tracking new Structural BMPs · POST CONSTRUCTION 2: Review and Update Maintenance Requirement for MDOT BMPs · POST CONSTRUCTION 4: Achieve Water Quality and Channel Protection Compliance · POST CONSTRUCTION 6: Update Drainage Manual · POLLUTION PREVENTION 1: BMP Inspections

OBJECTIVE

To develop a procedure for selecting, applying and maintaining permanent BMPs for selected MDOT projects statewide. Implementing these procedures will protect receiving water quality.

DESCRIPTION

Development of selection procedure for applying BMPs for storm water management activities.

ANNUAL REPORTING

- Report completion of BMP selection and pollutant discharge reduction estimate tools.
- Track the permanent BMPs selected for earth-disturbing projects using existing databases.
- Track permanent BMP installations, maintenance, and modifications.
- Track employee training on BMP selection and maintenance.
- Report pollutant discharge education based on theoretical BMP performance.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Update procedures for selecting permanent BMPs.	A selection tool for selecting BMPs will be posted on the MDOT Storm Water website.
Annual Assessment: A draft version of the BMP selection tool has been completed and is being tested for accuracy with MDOT projects.	
Develop a procedure to estimate pollutant discharge reduction based on theoretical BMP performance.	The BMP selection tool will incorporate a procedure for estimating pollutant discharge reductions.
Annual Assessment: The draft version of the BMP selection tool incorporates an estimate for reducing pollutant discharges.	
Issue staff guidance for the selection tool.	A document outlining the instructions for the tool will be distributed to the appropriate storm water related staff.
Annual Assessment: This measurable goal is a target for 2017.	
Implement procedures to select permanent BMPs.	Procedures will go into effect on the first of the year.

Annual Assessment: This measurable goal is a target for 2017.	
Evaluate existing procedures for applying and maintaining permanent BMPs.	Recommendations based on the evaluations will be given by the responsible party to the Stormwater Program Manager.
Annual Assessment: This measurable goal is a target for 2017.	
Update and/or develop procedures for applying and maintaining permanent BMPs.	Approved recommendations will be implemented into procedures.
Annual Assessment: This measurable goal is a target for 2017.	
Document procedures and issue staff guidance.	Updated procedures and guidance will be emailed to stormwater related staff.
Annual Assessment: This measurable goal is a target for 2017.	
Implement procedures to select, apply, and maintain permanent BMPs.	Updated or new procedures will be implemented for the selection, application, and maintenance of BMPs.
Annual Assessment: This measurable goal is a target for 2018.	
All projects will be evaluated for permanent stormwater BMP inclusion during scoping and early design.	BMPs identified for inclusion in new projects will be outlined in the Stormwater Annual Report.

Annual Assessment: There were several projects which incorporated BMPs in 2016:

- In the design phase of the I-75 at State Line project, vegetated swales and check dams were incorporated to treat stormwater before it is discharged to Lake Erie.
- JN 108096 in the Metro Region incorporated an energy infiltration ditch, bioswales, and over 80 extra deep sumps to provide pre-treatment and infiltration.
- A rain garden was installed at M-139 over the St. Joseph River Bridge.
- Deep catch basin sumps were installed on Riverside Drive at BL-94.

For more information, see Activity Pollution Prevention 1.

ACTIVITY POST CONSTRUCTION 4: COMPLY WITH PERFORMANCE STANDARDS FOR NEW DEVELOPMENT AND RE-DEVELOPMENT PROJECS TO THE MAXIMUM EXTENT PRACTICABLE
MONITORING YEAR: 2016

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION1: Program Assessment and Reporting · POST CONSTRUCTION 3: Develop Selection Procedure for BMPs · POST CONSTRUCTION 5: Review Projects Discharging to Impaired Waters · POST CONSTRUCTION 7: Site Plan Review for Post Construction Projects

OBJECTIVE

Achieve compliance standards for water quality and channel protection issued by the United States Environmental Protection Agency for all new development and redevelopment projects.

DESCRIPTION

As designated by the United States Environmental Protection Agency, all new development and redevelopment projects must comply with water quality and channel protection standards. Compliance with channel protection and water quality standards will be estimated, per project, using the BMP selection tool as a preliminary analysis tool, as described in Activity Post Construction 3.

ANNUAL REPORTING

- Post construction projects achieving standards will be documented in the Annual Report
- All newly constructed BMPs (as well as modifications, replacements, or enhancements of BMPs) will be documented in the Stormwater Annual Report

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Desktop assessment of new development and redevelopment projects using the BMP screening tool in preliminary analysis.	Results from the analysis will be submitted for each project to the Stormwater Program Manager.
Annual Assessment: This tool has been tested on several projects in 2016 and will be finalized based on these tests in 2017. Once finalized, this tool will be used in all preliminary analyses of projects.	
Meet compliance standards goals to the maximum extent practicable. Compliance standard goals include: · BMPs are designed based on site constraints to reduce post development suspended solids loadings · Treat runoff from 90% of all runoff producing storms · When impervious area is increased, post-construction runoff rate and volume match pre-development conditions as closely as possible for storms up to the two year, 24 hour event · Addressing specific pollutants on a site specific basis	Results from the analysis will be submitted for each project to the Stormwater Program Manager.
Annual Assessment: No projects met these requirements in 2016.	
Document the modification, replacement, or enhancement of BMPs.	A description of the work done will be given to the Stormwater Program Manager for inclusion in the Annual Report
Annual Assessment: No BMPs were modified, replaced or enhanced in 2016.	

ACTIVITY POST CONSTRUCTION 5: REVIEW PROJECTS WITH STORMWATER DISCHARGES TO WATER BODIES WITH PROMULGATED TOTAL MAXIMUM DAILY LOADS (TMDLs)

MONITORING YEAR: 2016

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINSTRATION 1: Program Assessment and Reporting · POST CONSTRUCTION 3: Procedure to Select BMPs · POST CONSTRUCTION 4: Water Quality and Channel Protection · POST CONSTRUCTION 6: Update Drainage Manual

OBJECTIVE

To develop a procedure for the review of projects with stormwater discharges to water bodies with a promulgated TMDL and to and implement stormwater controls statewide to meet responsibilities established by TMDLs to the MEP.

DESCRIPTION

An interactive map showing trunklines crossing 303(d) listed water bodies will be beneficial in the planning of MDOT projects to ensure compliance with water quality standards of discharges. All new development and redevelopment projects will use this map as a tool to assess if stormwater discharges to TMDL water bodies.

ANNUAL REPORTING

- Report completion of interactive mapping system on MDOT Stormwater Website
- Track location of projects discharging to waters with TMDL
- Track compliance with TMDL requirements.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Develop interactive mapping system on the MDOT Stormwater Web Site showing MDOT trunklines crossing 303(d)-listed water bodies.	Completed tool available to MDOT staff.
Annual Assessment: This measureable goal was completed in 2016 and is available to MDOT design staff. This newly created GIS tool allows users to enter their project limits and see if they intersect with 303(d) listed waters.	
Review all new projects that discharge to waters of the state with a promulgated TMDL.	Projects to be reviewed by environmental staff as necessary.
Annual Assessment: No new projects with TMDLs occurred in 2016. As these projects are encountered, this measurable goal will be adhered to.	
Evaluate various options to mitigate projects discharging to TMDL water bodies. BMPs are to be implemented to comply with stormwater related requirements to meet TMDLs.	Projects to be evaluated by environmental staff and an internal stormwater committee as needed.
Annual Assessment: No new projects with TMDLs occurred in 2016. As these projects are encountered, this measurable goal will be adhered to.	
Install and maintain BMPs on projects intersecting TMDL waterbodies.	Projects to be evaluated by environmental staff and an internal stormwater committee as needed.
Annual Assessment: No new projects with TMDLs occurred in 2016. As these projects are encountered, this measurable goal will be adhered to.	

ACTIVITY POST CONSTRUCTION 6: PERIODICALLY UPDATE DRAINAGE MANUAL

MONITORING YEAR: 2016

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · PUBLIC INVOLVEMENT 3: Coordinate with MPOs · POST CONSTRUCTION 3: Selection Procedure for BMPs · POST CONSTRUCTION 4: Water Quality and Channel Protection · POST CONSTRUCTION 5: Review Projects Discharging to Impaired Waters

OBJECTIVE

To update MDOT's policies and procedures for the design of BMPs. Other fields to be reviewed include the construction, maintenance, and demolition of BMPs as outlined in the manual.

DESCRIPTION

The existing Drainage Manual will be reviewed and revised as needed to include the latest details of the stormwater management program. Notification and guidance will be given to appropriate MDOT employees and job-related public.

ANNUAL REPORTING

· Track changes made to the Drainage Manual.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Assess the need to update the Drainage Manual. The first update of the Drainage Manual will include the new source of rainfall data of the MDEQ's 2006 memo providing the 90 percent annual non-exceedance storm statistics.	Proposed changes to be drafted by the environmental staff.
Annual Assessment: The Drainage Manual was assessed in 2016. The result of the assessment is that the manual needs to be updated to be updated to reflect the current status of the MDOT stormwater program.	
Update the Drainage Manual. Changes to manual must be approved by the Engineering Operations Committee (EOC).	Proposed changes to be delivered to the EOC for approval.
Annual Assessment: The changes discussed above will begin in 2017 and will occur throughout the permit cycle.	
Notify appropriate staff of changes to the manual.	Updated drainage manual will be distributed to the appropriate staff.
Annual Assessment: Once these changes are completed, MDOT staff will be notified.	

ACTIVITY POST CONSTRUCTION 7: SITE PLAN REVIEW FOR PROJECTS

MONITORING YEAR: 2016

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · POST CONSTRUCTION 4: Compliance with Water Quality and Channel Protection Standards

OBJECTIVE

Ensure compliance with post-construction stormwater requirements through a review process of site plans for installation, operation, and maintenance.

DESCRIPTION

As designated by the MDEQ MS4 Permit, MDOT must submit site plans for approval for each project subject to the post-construction stormwater runoff control requirements. Reviews will allow MDOT to ensure that the finished project will sufficiently meet post-construction stormwater runoff program requirements and long-term operation and maintenance of BMPs.

ANNUAL REPORTING

· Document number of projects submitted for review

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Initial site plans of post-construction stormwater BMPs shall be submitted for review to MDOT stormwater staff.	Site plan reviews by stormwater staff.
Annual Assessment: In 2016, no plans were submitted to the MDOT stormwater staff as the new storm water permit was still being developed. As plans are developed in the future, they shall be submitted for review by stormwater staff.	
Develop procedure for the site plan review and approval process. Procedure shall include a checklist of specific criteria to be used by plan reviewers.	Procedure shall be distributed to appropriate staff by the MDOT Stormwater Program Manager.
Annual Assessment: This measurable goal will be a focus for the year 2019.	

Appendix E – Construction Stormwater Runoff Control Activities

ACTIVITY CONSTRUCTION 1: REVIEW INTERNAL QUALITY ASSURANCE/QUALITY CONTROL (QAQC) PROTOCOL FOR CONSTRUCTION STORMWATER RUNOFF CONTROL

MONITORING YEAR: 2016

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · POST CONSTRUCTION 4: Water Quality and Channel Protection · POST CONSTRUCTION 5: Review Projects Discharging to Impaired Waters · IDEP 1: List of Construction Projects and Maintenance Activities

OBJECTIVE

To improve the effectiveness of temporary BMPs statewide through internal QAQC for construction stormwater control.

DESCRIPTION

Development of the QAQC protocol is underway and will be submitted to the Environmental Committee for approval.

ANNUAL REPORTING

- Track number and result of internal reviews
- Track actions taken per MDOT/SESC Manual.

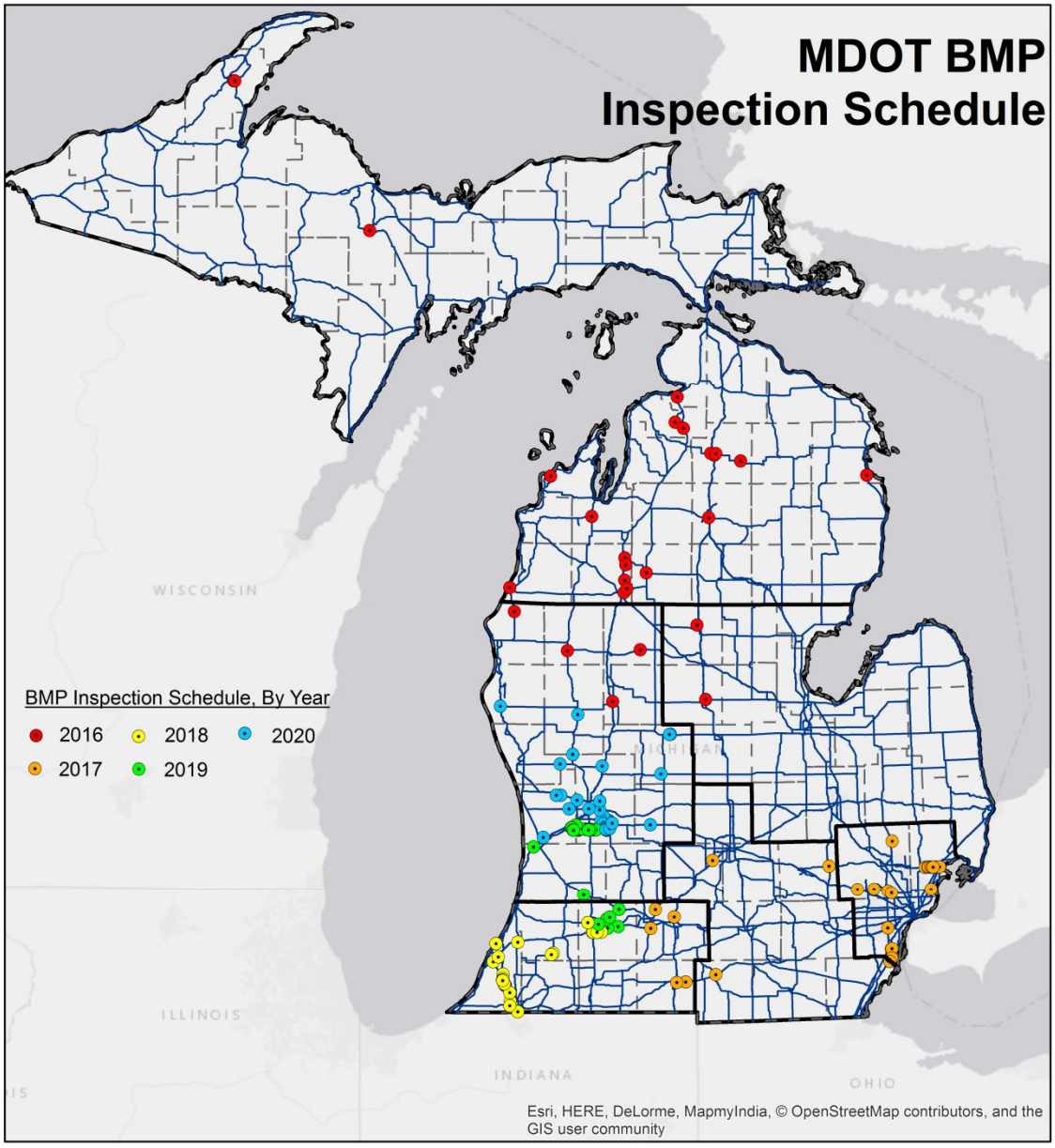
MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Review the QAQC protocol for construction stormwater control.	Revisions given to the Stormwater Program Manager by the responsible party.
Annual Assessment: This effort will be a focus for 2019.	
Update the QAQC protocol for construction stormwater control as necessary.	Final QA/QC protocol given to the Stormwater Program Manager by the responsible party.
Annual Assessment: This effort will be a focus for 2019.	
Notify the appropriate staff of changes to the protocol.	Notification and guidance documents to be distributed to staff members.
Annual Assessment: This effort will be a focus for 2019.	

Stormwater Best Management Practices - 2016 Inspections Summary

Stormwater BMPs are inspected every 5 years on a rotating basis. 27 of these BMPs were inspected in 2016. **Figure 1** shows the locations of BMPs inspected in 2016 as well as a tentative schedule for future inspections.

Each components of the BMP such as fencing, inlet and outlet conditions, mowing, trash and debris, etc. is inspected and scored on a scale from 1-9. An average score is then taken and documented for each BMP. This value is used to track the BMP's condition over time. Recommendations are also given based on the condition of the BMP. A summary of each of the BMPs inspected in 2016 is listed in **Table 1**.



LEGEND		
MDOT REGION DIVIDE COUNTY LINE STATE HIGHWAY BMP	-Michigan county line data was obtained from the Michigan Center for Geographic Data Library	0 25 50 100 Miles N MDOT AECOM

Figure 1 - BMP Inspection Schedule

Table 1: 2016 BMP Inspection Summary				
County	Location	Structures Inspected	Scoring Summary	Recommendations
Alpena	US-23 at Nicholson Hill Rd in SW Quadrant	Detention Basin	Average Score of 7.3 All scores were Good.	Clean out Inlet 1.
Charlevoix	M-75 at Boyne Industrial Park on NE side of Road	Infiltration Swale	Average Score of 4.5. 14 scores of Poor, remainder of the scores were Fair	Advise M-75 Service Center (Adjacent Property Owner) to stop mowing ditch, Remove sediments from all ditches and inlet channels, Unplug culvert/inlets that are currently filled with sediments and vegetation.
Charlevoix	US-131 BR (Boyne Falls)	Retention Basin	Average Score of 6.4. Scores ranged from Fair to Good.	Evaluate if riprap needs to be added to west spillway.
Clare	US-127 BR	Infiltration Field	Average Score of 5.5. Three Poor scores: Inlet 2, 3,9 The remainder of scores ranged from Fair to Good.	Remove sediments from inlet channels, contact owner to discuss the issues with flooding.
Crawford	I-75 BR @ Au Sable River	Vegetative Ditch & Leaching Basin	Average Score of 7.3. Three scores of Fair, the remainder are Good.	Clean out structures in NW and NE Quadrants of crossing, Clean sediment traps at all applicable manholes.
Emmet	Northbound US-131 South of Lears Rd in Petoskey	Retention Basin	Average Score of 6.3. One score of Poor, Four scores of Fair, the remainder Good	Clean out Inlet 2, Clean out Inlet 1.

Table 1: 2016 BMP Inspection Summary				
County	Location	Structures Inspected	Scoring Summary	Recommendations
Grand Traverse	M-37 South of Beitner Rd	Detention Basin	Average Score of 7.0. One score of Critical for Outlet 2 (buried, filled with organics). Remained of scores ranged from Fair to Good.	Clean out Inlet 1, Inlet 2, and Outlet 2 and remove vegetation (large shrubs and trees).
Houghton	Cemetery Rd in City of Houghton	Detention Basin	Average Score of 7.2. All scores ranged from Fair to Good.	Clear sediment from Inlet 1, Investigate riser structure to determine what is preventing structure from draining water.
Houghton	US-41 near City of Houghton	Drop Structure	Average Score of 5.5. Four scores of Poor, the remainder ranged from Fair to Good.	Clean out Inlet 2, Remove sediment from OUT-1 Channel.
Isabella	M-20 @ US-127 (NE Quadrant)	Pump Station and Retention Basin	Average Score of 6.5. One score of Poor for Outlet 1 (buried & plugged). Remainder of scores ranged from Fair to Good.	Clean out Outlet 1; remove larger trees and shrubs from the basin.
Lake	M-37 @ Lake Street in Baldwin	Vortech Separator	Average Score of 6.5. All scores ranged from Fair to Good.	Clean trash from MH-3.

Table 1: 2016 BMP Inspection Summary				
County	Location	Structures Inspected	Scoring Summary	Recommendations
LeeLanau	M-22 (M-109 to M-204)	Pump Station and Retention Basin	Average Score of 6.1. One score of Critical for the pump station. Two scores of poor for fencing and mowing. Remainder of scores ranged from Fair to Good.	Repair damaged fencing sections (remove vegetation), mow outer basin berms, pump station pumps should be evaluated and fixed.
Manistee	US-31 1200 ft N of Quincy	Vortech Separator	Average Score of 7.5. Every score was rated Good.	None
Marquette	M-35 from Iron St to Slate Alley in Gwinn	Infiltration Trenches	Average Score of 7.2 All scores ranged from Fair to Good.	None
Mason	US-31 S of Sauble Drive	Paved Ditches, Sediment Forebays, Vegetated Ditches	Average Score of 4.5. One score was rated Critical: manholes. Scores rated Poor include: erosion, sediment forebays, riprap, check dam, grated structures. The remainder of the scores ranged from Fair to Good.	Vacuum sediments from paved ditches and culverts, replace rip rap in washed out check dams, clean out vegetation and sediments, replace rip rap and clean out check dams of three close to road (SW Quad), leave three checks dams in SW Quad overgrown with vegetation, remove trash and debris from paved ditches, culverts, grated structures, repair critical manhole.

Table 1: 2016 BMP Inspection Summary				
County	Location	Structures Inspected	Scoring Summary	Recommendations
Mecosta	US-31 at Old State Rd, NE Quadrant	Detention Basin	Average Score of 6.5. All scores ranged from Fair to Good.	Regular maintenance to keep inlet from clogging.
Missaukee	M-66 @ Randall Road	Infiltration Basin	Average Score of 7.1. All scores ranged from Fair to Good.	None
Osceola	US-10 @ Cedar St in SE Quadrant	Retention Pond	Average Score of 5.9. Three scores of Poor: erosion, Channel Inlet 1, sediment forebay. Remainder of scores ranged from Fair to Good.	Remove large trees near inlet and fences, remove sediments and erosion from Inlet Channel 1, remove sediments from Inlet 1
Otsego	I-75 BR at Grandview Blvd (1500 ft E of I-75 BR & S side of Grandview)	Detention Basin	Average Score of 6.3. One score of Poor, the remainder ranged from Fair to Good.	Adding a fence around basin for safety of maintenance workers and health of the elk.
Otsego	M-32 W of Meecher Rd (behind Monte's Car Wash)	Detention Basin	Average Score of 5.9. One score of Poor, the remainder ranged from Fair to Good.	Replace trash rack at Inlet 2, fix trash rack at inlet 1, stabilize erosion around inlets and inlet channel, and assess the catch basins flowing into the basin to ensure no clogging, remove spoils pile from basin

Table 1: 2016 BMP Inspection Summary				
County	Location	Structures Inspected	Scoring Summary	Recommendations
Otsego	M-32 at Hayes Rd	Detention Basin	Average Score of 6.2. All scores ranged from Fair to Good.	Repair severely damaged fence section, clean out trash piling up around trash rack, repair erosion with additional riprap at IN-1 and south side inlet channel, repair trash rack.
Otsego	M-32 S of Johannesburg	Detention Basin	Average Score of 6.0. One score of Critical, One score of Poor. The remainder of scores ranged from Fair to Good.	Add larger riprap near basin in Channel 4 to stabilize and add riprap along the rest of the channel, too. Stabilize banks into basin to prevent erosion, and routine maintenance on inlets to ensure they are clear for water to flow through.
Wexford	US-131 and ¼ Mile South of 30 ½ Rd	Detention Basin	Average Score of 6.1. Two scores of Poor: Inlet 2 and 3. The remainder of scores ranged from Fair to Good.	Fix eroded asphalt inlets, remove sediments from inlets.
Wexford	US-131 BR @ Mackinaw Trail in NW Quadrant	Detention/Retention Ponds	Average Score of 6.8. All scores ranged from Fair to Good.	Remove trees and large shrubs from basins and side slopes, fix erosion and stabilize Inlet 2, remove sediments at Inlet 2, replace riprap at Inlet 2, stabilize erosion issues north of north pond.

Table 1: 2016 BMP Inspection Summary				
County	Location	Structures Inspected	Scoring Summary	Recommendations
Wexford	US-131 at 18 ½ Rd in NE Quadrant	Infiltration Basin	Average Score of 5.3. Four scores of Poor, the remainder of scores ranged from Fair to Good.	Remove sediments in basin interior, stabilize erosion and remove sediments from inlet channel, further assessment needed to determine problems with water not flowing into inlet, remove overgrown vegetation and add riprap to inlet channel.
Wexford	US-131 @ 12 ¾ Rd in NW Quadrant	Detention Basin	Average Score of 5.9. Two scores of Poor: Inlet 1, Inlet 6. The remainder of scores ranged from Fair to Good.	Resurface asphalt spillways where erosion is occurring, remove sediments at the bottom of the asphalt spillways, remove sediments from plugged culverts including Inlet 1, Inlet 8, clean out vegetation from inlet culverts including Inlet 1, Inlet 7, Inlet 8, Inlet 9.
Wexford	US-131 @ M-55 in SW Quadrant	Infiltration Basin	Average Score 6.8. All scores ranged from Fair to Good.	Remove sediments from Inlet 4, Inlet 8.

Appendix F – Pollution Prevention Activities

ACTIVITY POLLUTION PREVENTION 1: BMP INSPECTIONS MONITORING YEAR: 2016	
Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting
OBJECTIVE	
Routine inspections of MDOT structural BMPs to ensure compliance with various components of the permit.	
DESCRIPTION	
BMPs will undergo inspection to ensure that facilities comply with developed maintenance procedures.	
ANNUAL REPORTING	
· Summary of all inspections done and recommendations for each BMP.	
MEASURABLE GOALS	
MEASURABLE GOAL	**MEASURE OF ASSESSMENT**
An inspection of BMPs shall be conducted at least once every five years to ensure appropriate maintenance.	Inspection reports to be given to the Stormwater Program Manager.
Annual Assessment: 27 BMPs were inspected during the 2016 monitoring period. See attached BMP Inspection Summary. See map in the inspection report for a BMP inspections schedule for all years in the permit cycle.	
Items identified during inspections as needing attention shall be addressed.	Stormwater Program Manager to notify maintenance crews and follow up, as necessary.
Annual Assessment: Recommendations provided in the 2016 summary will be addressed during 2017.	
As needed, identify BMPs to be modified, replaced, or enhanced.	BMPs identified for modification, replacement, or enhancement will be outlined in the annual report.
Annual Assessment: On an as needed basis throughout the permit cycle, BMPs will be modified, replaced or enhanced.	

ACTIVITY POLLUTION PREVENTION 2: AUDIT THE POLLUTION INCIDENT PREVENTION PLAN (PIPP) REQUIREMENTS

MONITORING YEAR: 2016

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting

OBJECTIVE

Assure that vehicle maintenance activities statewide do not pollute stormwater runoff to the maximum extent practicable.

DESCRIPTION

Internal auditing of the PIPP will continue to be conducted and implemented.

ANNUAL REPORTING

- Summary of PIPP audits
- Document new programs, policies, procedures and information.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Conduct an audit of the PIPP requirements every three years.	Results of audit reported to Stormwater Program Manager
Annual Assessment: A schedule for auditing will be developed in 2017, audits will begin in 2018.	
Follow-up on any delinquent plan requirements and revise appropriately.	Follow up to be confirmed to Stormwater Program Manager
Annual Assessment: This effort will be a focus for 2019.	
Formally accept the changes made to the PIPP.	To be made by the Stormwater Program Manager
Annual Assessment: This effort will be a focus for 2019.	

ACTIVITY POLLUTION PREVENTION 3: CONDUCT INSPECTIONS OF MAINTENANCE FACILITIES

MONITORING YEAR: 2016

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · POLLUTION PREVENTION 2: Audit PIPP Requirements

OBJECTIVE

Routine inspections of MDOT maintenance facilities to ensure compliance with various components of the permit.

DESCRIPTION

Maintenance facilities will undergo inspection to ensure that facilities comply with: good housekeeping for salt and sand storage, compliance with discharges from cutting, grinding, drilling, or hydro demolition of concrete or asphalt, and fleet maintenance activities.

ANNUAL REPORTING

· Summary of all inspections done and recommendations for each facility.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
An inspection of maintenance facilities shall be conducted at least once every five years. Salt and sand storage facilities, cross connections between storm sewer and sanitary sewer, the washing of vehicles, and labelling of outfall structures shall be inspected.	Reporting of each inspection provided to the Stormwater Program Manager
Annual Assessment: 11 maintenance facilities were inspected during the 2016 monitoring year. See attached summary for details and for a schedule of all inspections during the permit cycle.	
Recommendations shall be presented if practices are not in compliance with the permit.	Reporting of each inspection provided to the Stormwater Program Manager
Annual Assessment: In 2016, there were several issues found during inspections which were presented to the stormwater program manager.	
Maintenance facilities with provided recommendations shall address concerns within one year of the inspection.	The Stormwater Program Manager will work closely with maintenance facility personnel to ensure recommendations are incorporated.
Annual Assessment: Recommendations given for issues found during the 2016 inspections should be addressed in 2017.	

Maintenance Facilities – 2016 Inspections Summary

MDOT's Maintenance Facilities are inspected every 5 years on a rotating Basis. Eleven maintenance facilities were inspected in 2016. A map of the garages inspected in 2016 as well as the future inspection schedule is presented in **Figure 1**.

Maintenance Facilities were inspected for cross connections between the storm sewer and sanitary sewer systems as well as functionality and maintenance of each of these systems. Items identified as a risk during inspections were assessed for the probability of failure and the consequence of failure. Based on the scores given for each of these categories, items were determined to be high, moderate, or low risks. Recommendations for each of the findings are presented in the **Tables 1 -3**.

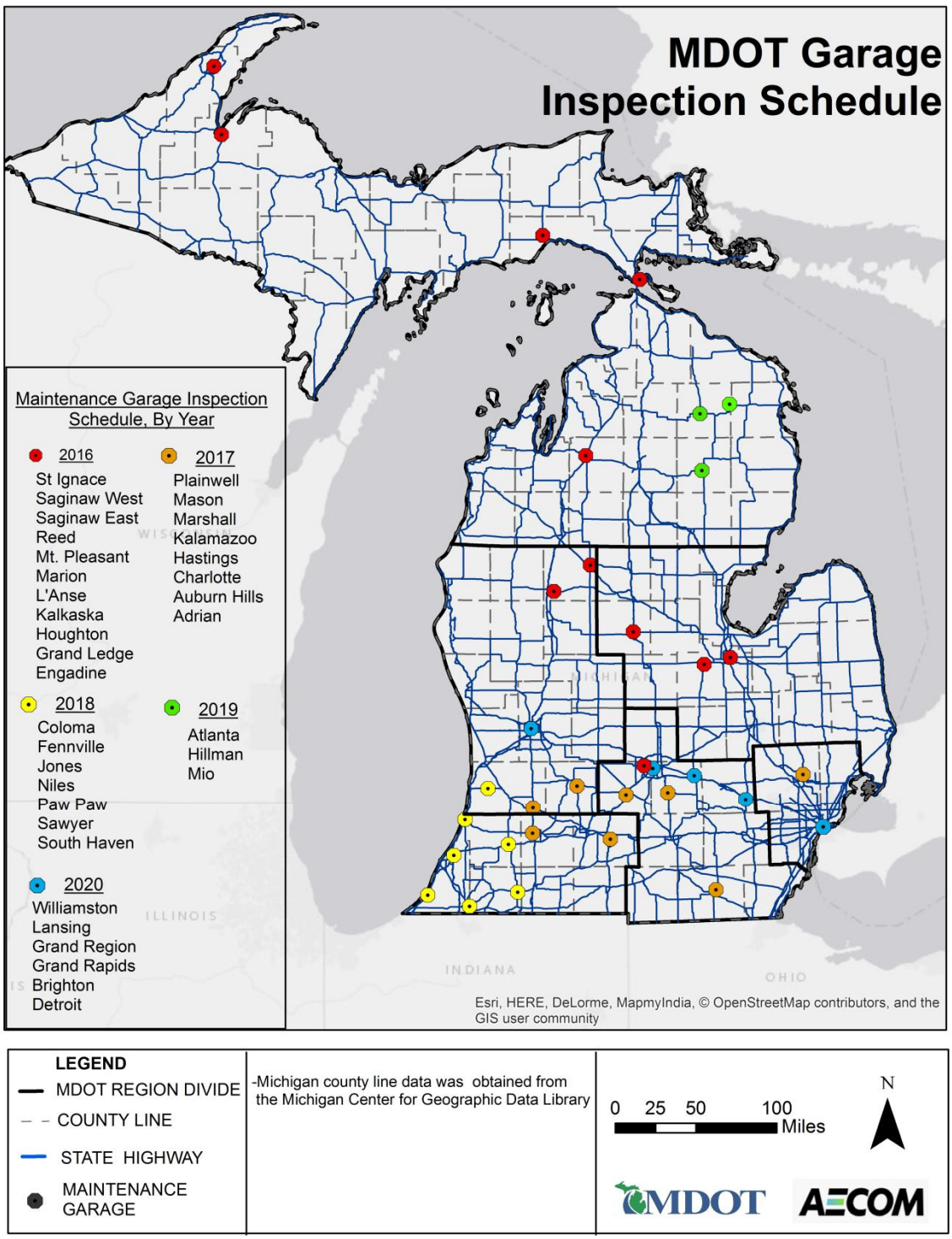


Figure 1 - Maintenance Facility Inspection Schedule

Table 1: Maintenance Facility Locations and Items with High Risk Ratings		
Location	High-Risk Items	Recommendations
Engadine	(1) The grate openings on floor drain FD2 are filled with small rocks	(1) Clean grate openings on floor drain FD2
Grand Ledge	(1) Oil/water separators and sanitary sewer from men's bathroom seem to regularly clog, potentially leading to flooding	(1) Clean oil/water separators regularly to allow proper flow
Kalkaska	(1) The cement cutting machine is discharging high pH water into the environment (2) Sanitary manhole S5 is below grade and buried, not allowing for maintenance (3) Could not locate other end of pipe to north in storm manhole ST1 (4) Could not locate other end of pipe to the southwest in catch basin CB2	(1) Send discharge to sanitary sewer (2) Raise S5 to grade (3) Televise and GPS track pipe to locate other end (4) Televise and GPS track pipe to locate other end
Marion	(1) Floor drain FD4 is clogged and has the potential to lead to flooding (2) Sanitary manhole S1 has a perforated storm sewer cover, allowing storm runoff to enter (3) Storm manhole ST1 has an orange cone on top of it and is missing a frame	(1) Clean and verify connection to sanitary sewer (2) Replace with solid cover (3) Install proper frame and cover
Mt. Pleasant	(1) Storm sewer and manholes ST2 and ST3 shown on east side of site plans could not be located	(1) Verify if storm sewer and manholes were ever installed
Reed City	(1) Sanitary manhole S6 is buried, not allowing for proper maintenance	(1) Locate manhole using metal detector and unbury
Saginaw Special Crews	(1) Floor drains FD3-5 are clogged and have the potential to lead to flooding	(1) Clean and verify connection to sanitary sewer
Saginaw West	(1) Catch basin CB1 is missing a frame and cover causing a hazard for site staff and vehicles (2) Storm manholes ST1 and ST2 could not be located, yet pipes could be seen in their direction	(1) Install frame and grated cover (2) Televise and GPS track pipes to locate other ends

Table 2: Maintenance Facility Locations and Items with Moderate Risk Ratings		
Location	Moderate- Risk Items	Recommendations
Engadine	(1) The storm culvert inlet just southeast of sanitary manhole S1 has collapsed, possibly reducing flow and causing flooding	(1) Fix or replace the culvert inlet to allow proper flow
Grand Ledge	(1) Roof drain between buildings MA and MG flow to floor drain FD3	(1) Disconnect roof drain from FD3 and redirect to the south side of building MA to pavement
Kalkaska	(1) Sanitary discharge pipe from C&T Lab freezes and back sewage into floor drain FD12 causing safety issues with site staff	(1) Bury pipe deeper and insulate
Marion	(1) Floor drains FD1 and FD2 are clogged and have the potential to lead to flooding	(1) Clean and verify connection to sanitary sewer
Mt. Pleasant	(1) Sanitary manhole S1 is below grade and asphalted over, not allowing for proper maintenance (2) Sanitary sewer shown on east side of plans could not be located	(1) Remove asphalt and raise S2 to grade (2) Verify if sanitary sewer was ever installed
Reed City	(1) Could not locate the other ends of the northern pipes in catch basins CB3, CB4 and CB5 (2) Storm manhole ST3 is buried, not allowing for maintenance	(1) Televise and GPS track pipes to find other ends (2) Locate manhole using metal detector and unbury
Saginaw East	(1) Could not locate source of water from southwest pipe in sanitary (2) Sanitary manhole S1 has a grated storm sewer cover, allowing storm runoff to enter	(1) Televise and GPS track to find source/other end and disconnect if not sanitary (2) Replace with solid cover
Saginaw Special Crews	(1) Roof drain on the west side of Building A goes underground to unknown outlet	(1) Locate end point/connection and confirm not connected to sanitary sewer
Saginaw West	(1) Sanitary manhole S5 is located in a low spot in pavement, allowing stormwater to pond over it (2) Sanitary manhole S10 has a grated catch basin cover, allowing storm runoff to enter (3) Sanitary manhole S11 could not be located, yet a pipe could be seen in sanitary manhole S10 from the direction of sanitary manhole S11	(1) Raise sanitary manhole S5 and pavement to prevent storm flow to sanitary sewer (2) Replace with solid cover to prevent storm flow to sanitary sewer (3) Televise and GPS track pipe to locate other end
St. Ignace	(1) The storm structures (manholes and catch basins) on site clog with debris and excess sediment from the catch basins, reducing flow	(1) Clean all storm structures and sewers regularly to allow proper flow

Table 3: Locations and Items with Low Risk Ratings		
Location	Low-Risk Items	Recommendation
Engadine	(1) Sanitary manhole S1 contained debris (2) Floor drain FD3 is disconnected from the sanitary sewer If vehicle washing and maintenance is performed in the garage, FD3 must be pumped in order to eliminate standing water and overflow contaminates into the garage	(1) Clean sanitary manhole S1 (2) Connect FD3 to the septic system and install an oil/water separator between the discharge of FD3 and entry into the septic system IF vehicle washing will be done in this building. Otherwise, prevent vehicle washing to be done in this building.
Grand Ledge	(1) Catch basin CB1 is used to catch wash water and is located on the sanitary sewer, yet it is located outside and collecting storm runoff (2) Roof drains on building MA flow underground to sanitary sewer	(1) Remove CB1 and install pipe to route flow to S1. Install new catch basin and route to a new storm manhole on storm sewer line to northeast. Alternatively, turn CB1 into a floor drain by enclosing the area around it with a structure that keeps storm runoff from entering. However, this is potentially more costly than installing new storm structures. (2) Disconnect roof drains from sanitary and redirect to new storm manhole and then to CB3
Mt. Pleasant	(1) The pipe in the sanitary manhole S4 does not have a gasket or an elbow to prevent gases from entering the building, creating a hazard for site staff (2) Floor drains FD10 and FD11 are clogged and have the potential to lead to flooding (3) Storm manhole ST4 has a solid cover, but is located in a pavement low spot and has the potential to lead to ponding over it	(1) Install a gasket and an elbow to prevent gases from entering building (2) Clean and verify connection to sanitary sewer (3) Replace with perforated lid to allow storm flow into storm sewer
Saginaw East	(1) Solid cover on sanitary manhole S3 and grated cover on storm manhole ST1 have been switched to allow runoff around the salt shed into the sanitary sewer, but at the same time allows a large amount of storm runoff into the sanitary sewer (2) Could not confirm flow from floor drain FD11 to sanitary manhole S1 (3) Could not locate storm manhole ST2	(1) Switch covers back and install a collection system such as a trench drain at the entrance to the salt shed that can be pumped periodically or discharged to the sanitary sewer upon written approval from the wastewater treatment plant (2) Clean sewers regularly to allow proper flow (3) Locate manhole using metal detector and unbury to inspect condition
Saginaw Special Crews	(1) Sanitary manhole S11 is buried under rocks, not allowing for maintenance	(1) Locate manhole using metal detector and unbury

Table 3: Locations and Items with Low Risk Ratings		
Location	Low-Risk Items	Recommendation
Engadine	(1) Sanitary manhole S1 contained debris (3) Floor drain FD3 is disconnected from the sanitary sewer If vehicle washing and maintenance is performed in the garage, FD3 must be pumped in order to eliminate standing water and overflow contaminates into the garage	(3) Clean sanitary manhole S1 (4) Connect FD3 to the septic system and install an oil/water separator between the discharge of FD3 and entry into the septic system IF vehicle washing will be done in this building. Otherwise, prevent vehicle washing to be done in this building.
Grand Ledge	(3) Catch basin CB1 is used to catch wash water and is located on the sanitary sewer, yet it is located outside and collecting storm runoff (4) Roof drains on building MA flow underground to sanitary sewer	(3) Remove CB1 and install pipe to route flow to S1. Install new catch basin and route to a new storm manhole on storm sewer line to northeast. Alternatively, turn CB1 into a floor drain by enclosing the area around it with a structure that keeps storm runoff from entering. However, this is potentially more costly than installing new storm structures. (4) Disconnect roof drains from sanitary and redirect to new storm manhole and then to CB3
Mt. Pleasant	(4) The pipe in the sanitary manhole S4 does not have a gasket or an elbow to prevent gases from entering the building, creating a hazard for site staff (5) Floor drains FD10 and FD11 are clogged and have the potential to lead to flooding (6) Storm manhole ST4 has a solid cover, but is located in a pavement low spot and has the potential to lead to ponding over it	(4) Install a gasket and an elbow to prevent gases from entering building (5) Clean and verify connection to sanitary sewer (6) Replace with perforated lid to allow storm flow into storm sewer
Saginaw East	(4) Solid cover on sanitary manhole S3 and grated cover on storm manhole ST1 have been switched to allow runoff around the salt shed into the sanitary sewer, but at the same time allows a large amount of storm runoff into the sanitary sewer (5) Could not confirm flow from floor drain FD11 to sanitary manhole S1 (6) Could not locate storm manhole ST2	(4) Switch covers back and install a collection system such as a trench drain at the entrance to the salt shed that can be pumped periodically or discharged to the sanitary sewer upon written approval from the wastewater treatment plant (5) Clean sewers regularly to allow proper flow (6) Locate manhole using metal detector and unbury to inspect condition
Saginaw Special Crews	(2) Sanitary manhole S11 is buried under rocks, not allowing for maintenance	(2) Locate manhole using metal detector and unbury

ACTIVITY POLLUTION PREVENTION 4: DOCUMENTATION OF ROAD MAINTENANCE ACTIVITIES

MONITORING YEAR: 2016

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINSTRATION 1: Program Assessment and Reporting

OBJECTIVE

Document road maintenance activities related to stormwater and stormwater pollution control.

DESCRIPTION

Road maintenance activities include catch basin cleaning and street sweeping will be documented and reported to the Stormwater Program Manager on an annual basis for inclusion in the Stormwater Annual Report. MDOT roadways will be operated and maintained and storage facilities will be constructed to reduce pollutants washing into surface waters statewide.

ANNUAL REPORTING

- Estimate actual quantity of salt used for de-icing versus maximum calculated amount based on Maintenance Performance Guide 14100.
- Track hours of street sweeping and catch basin cleaning conducted.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Street sweeping will be completed and time commitments will be determined annually, based on annual budgets.	Reported by TSC Region Manager to the Stormwater Program Manager on an annual basis.
Annual Assessment: Refer to Figure F1 for recorded street sweeping activity, by region.	
Catch-basin cleaning will be completed and time commitments will be determined annually, based on annual budgets.	Reported by TSC Region Manager to the Stormwater Program Manager on an annual basis.
Annual Assessment: Refer to Figure F2 for recorded catch basin cleaning activity, by region.	
Follow MDOT Maintenance Performance Guide for all maintenance activities (road maintenance, street sweeping, catch basin cleanout, bridge, unpaved road maintenance, right of way, culvert, underdrain and edge cleaning, facility and truck washing, deicing, cold weather)	Maintenance Staff Manager to ensure all employees follow procedures.
Annual Assessment: All regions have been in compliance with the maintenance performance guidelines for 2016. A summary of winter maintenance including salt, sand, and liquid treatment statewide, per county, and per MDOT region is presented in the following pages.	

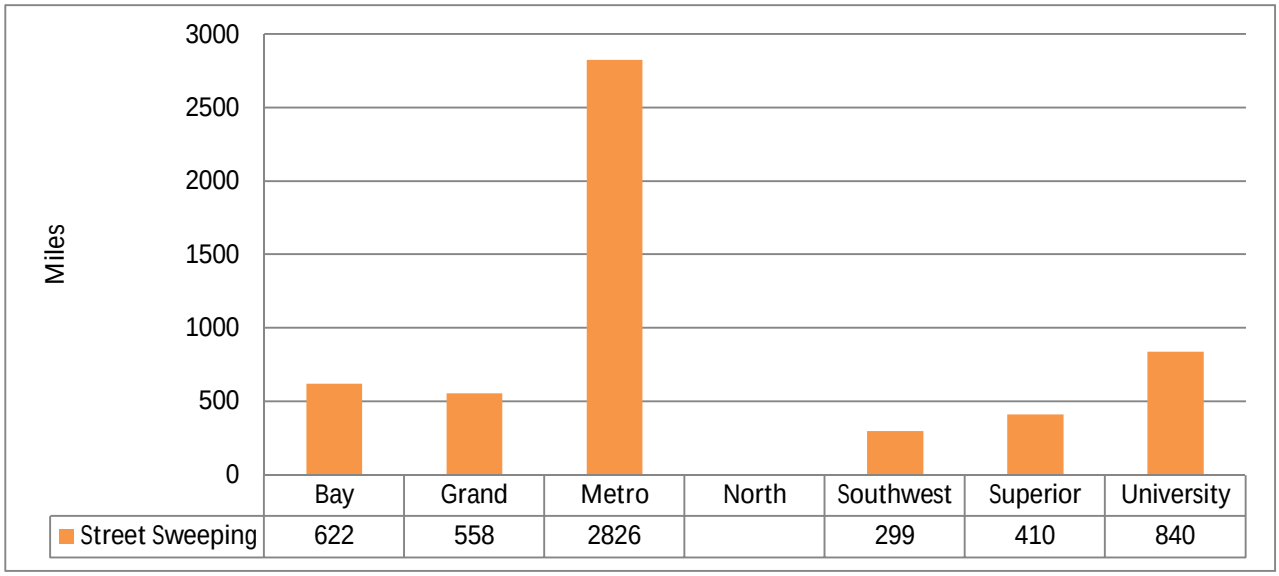


Figure F1 – 2016 Street Sweeping By Region

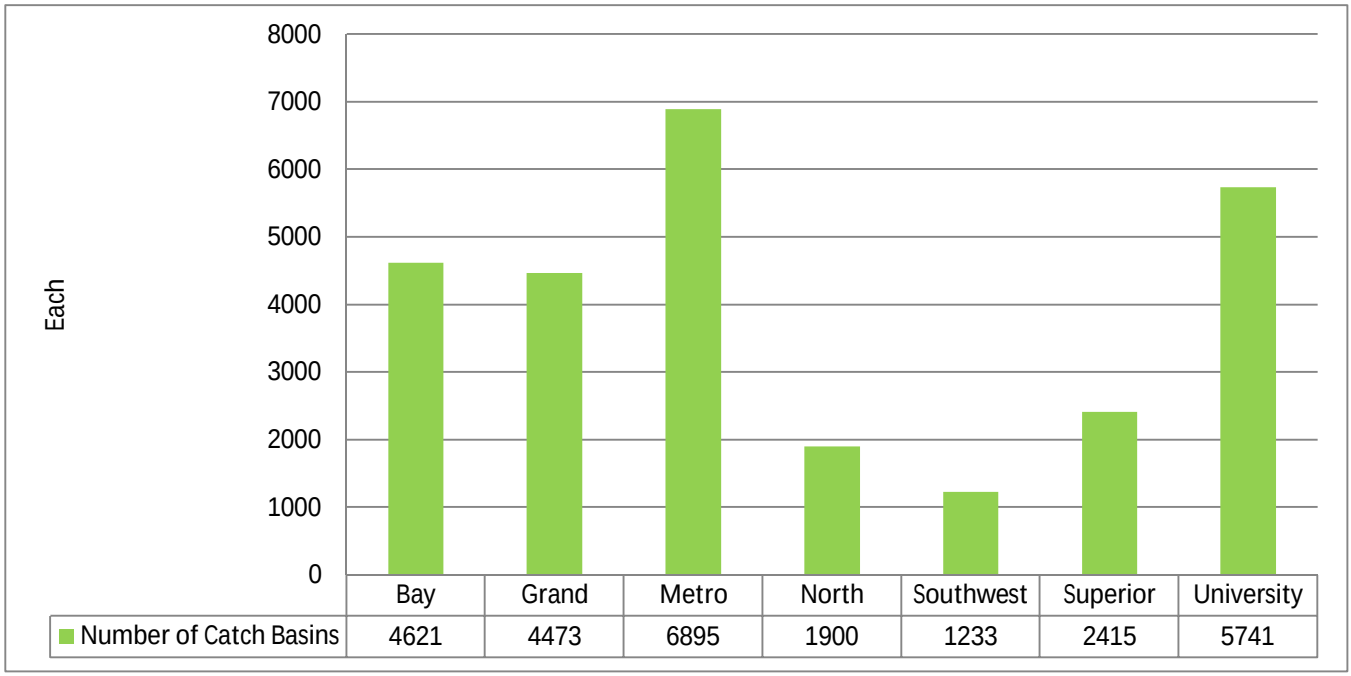
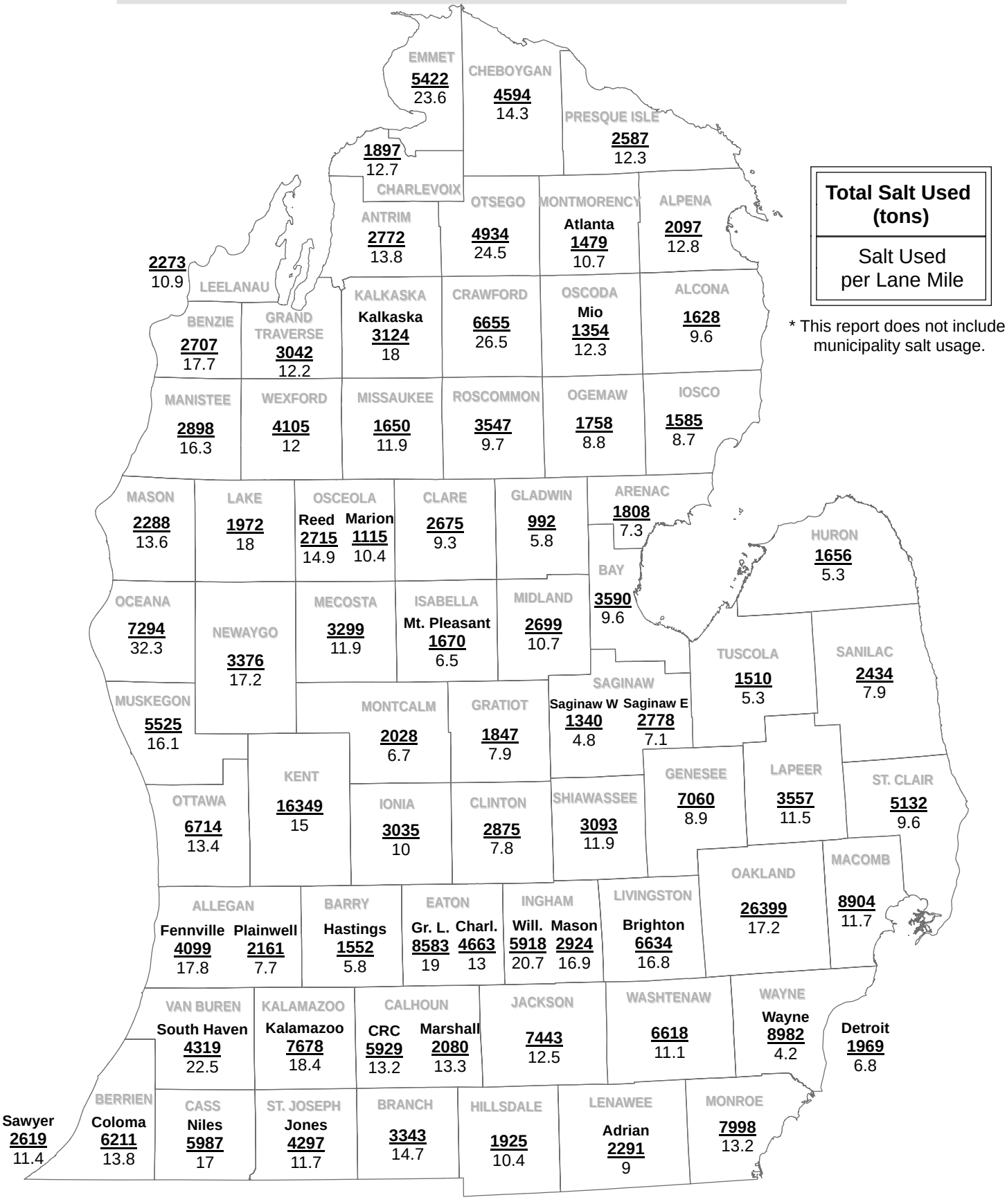


Figure F2 – 2016 Catch Basin Cleaning By Region

SALT USAGE FY 2016

MDOT Garages and County Road Commissions



Total Salt Used (tons)
Salt Used per Lane Mile

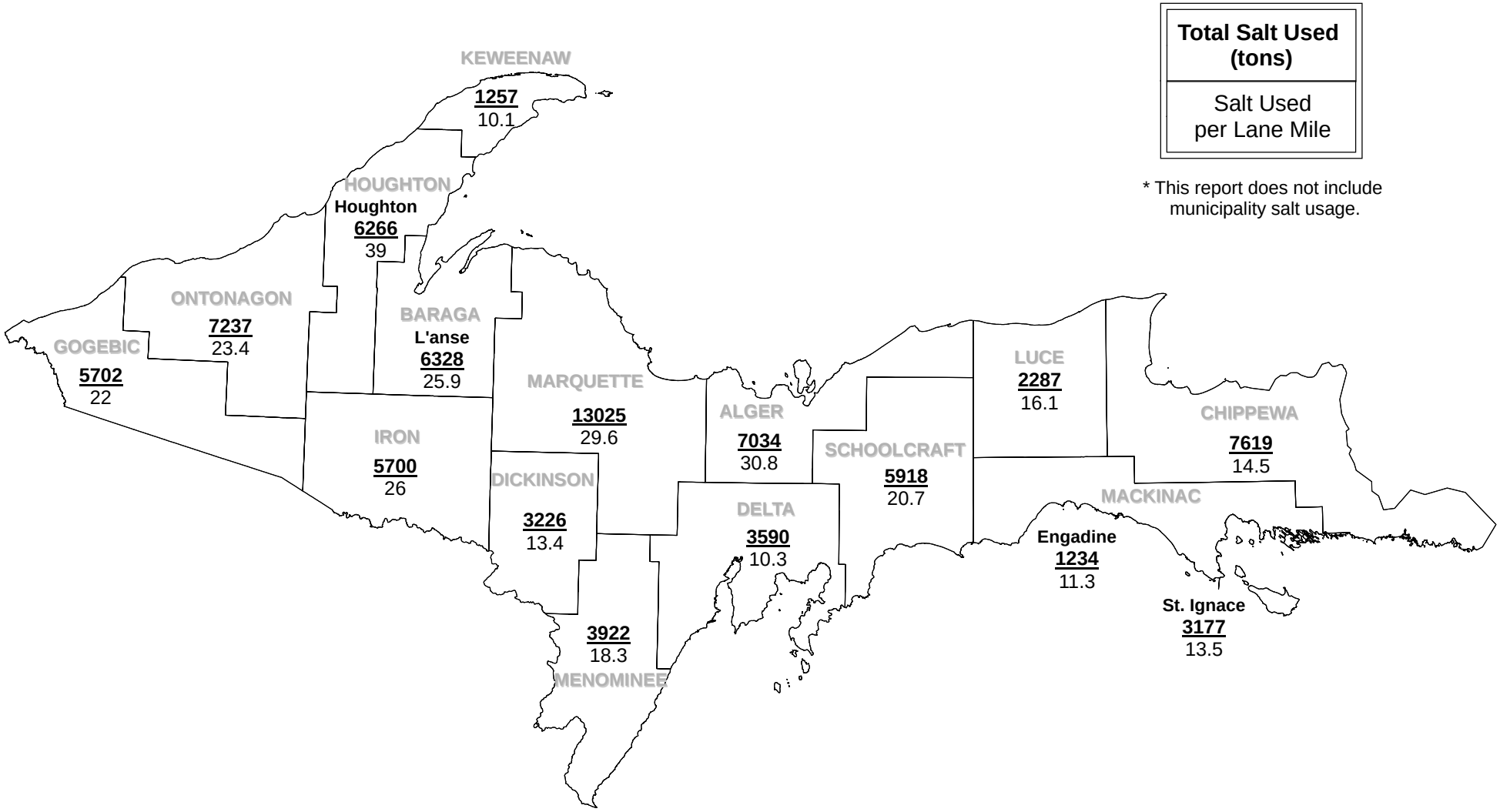
* This report does not include municipality salt usage.

Prepared by: Operations Field Services Division - Region Support

Salt Usage thru March 31st, 2016

SALT USAGE FY 2016 YTD

MDOT Garages and County Road Commissions



* This report does not include municipality salt usage.

Prepared by: Operations Field Services Division - Region Support

Salt Usage thru March 31st, 2016

STATEWIDE SUMMARY : FY 2016 County & Garage Winter Material Usage

April Report

Statwide Statistics YTD

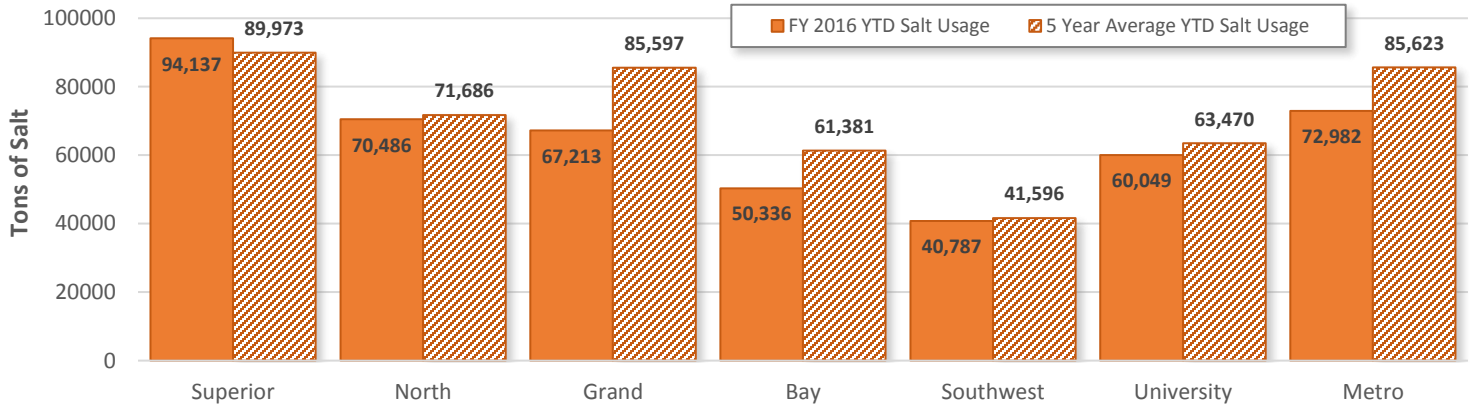
Statewide Total Lane Miles
30307.5

Salt Usage per Lane Mile
15.0

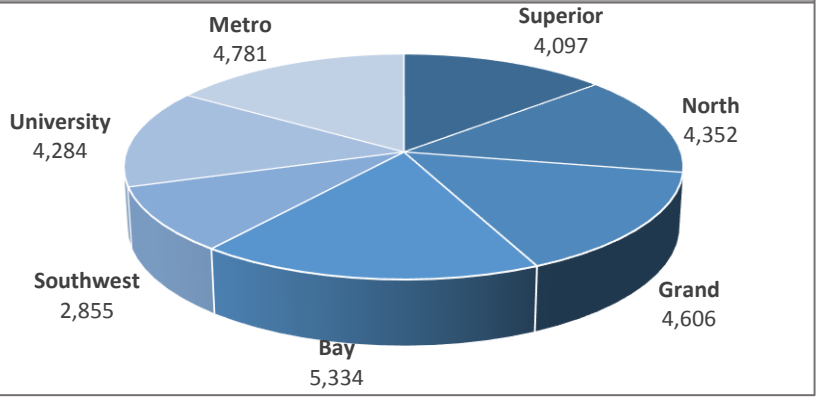
Liquid Usage per Lane Mile
59.2

Sand Usage per Lane Mile
1.9

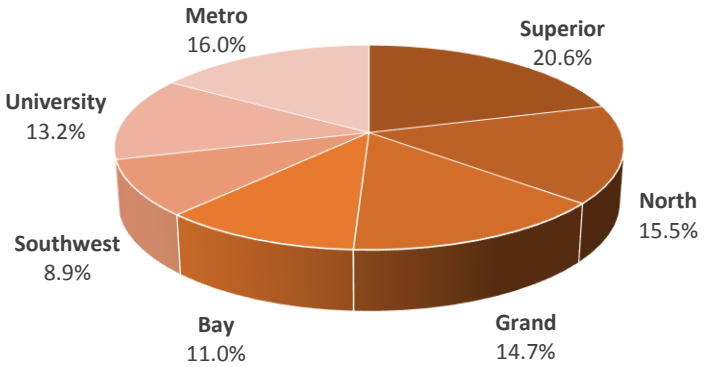
YTD Salt Usage by Region FY 2016



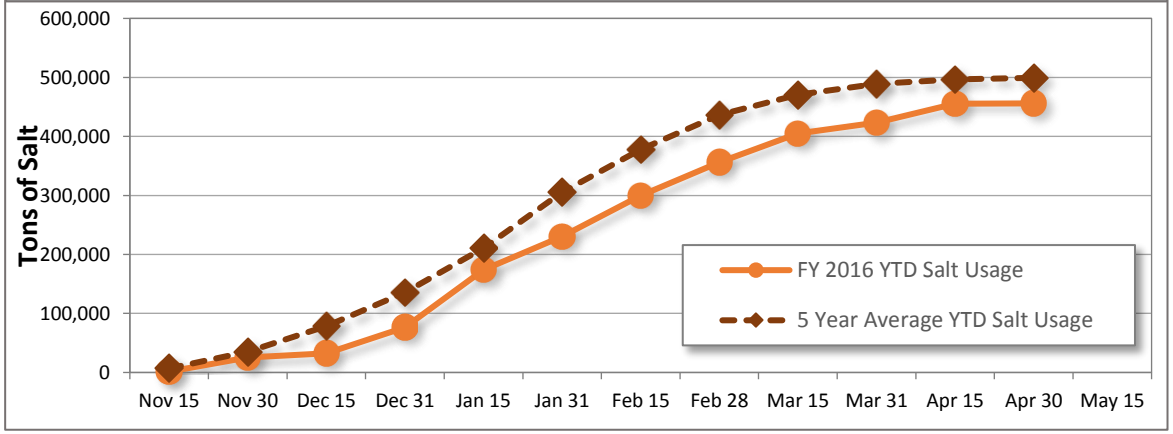
Regions Lane Miles FY 2016



YTD Salt Usage by Region FY 2016

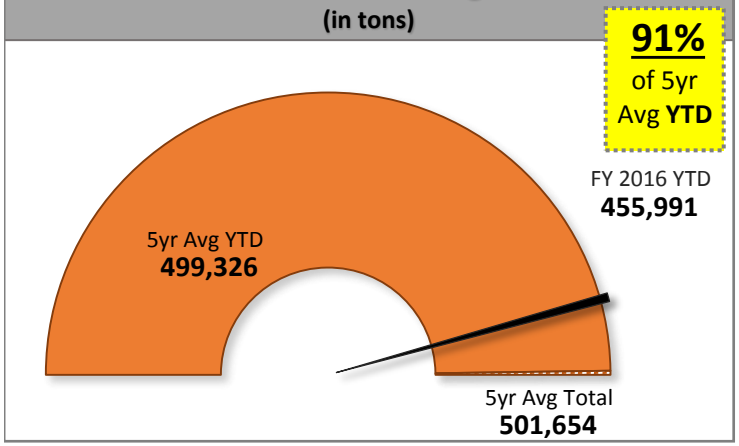


Cumulative Salt Usage FY 2016 YTD



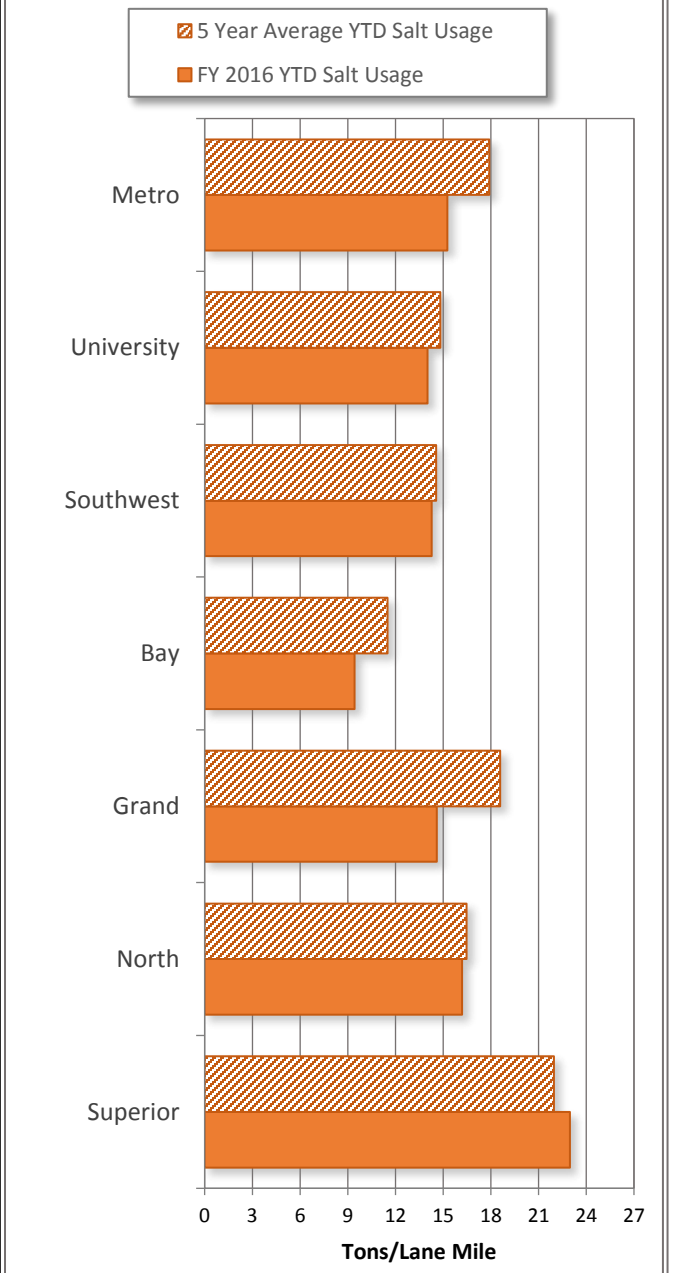
Statewide YTD Salt Usage FY 2016

(in tons)

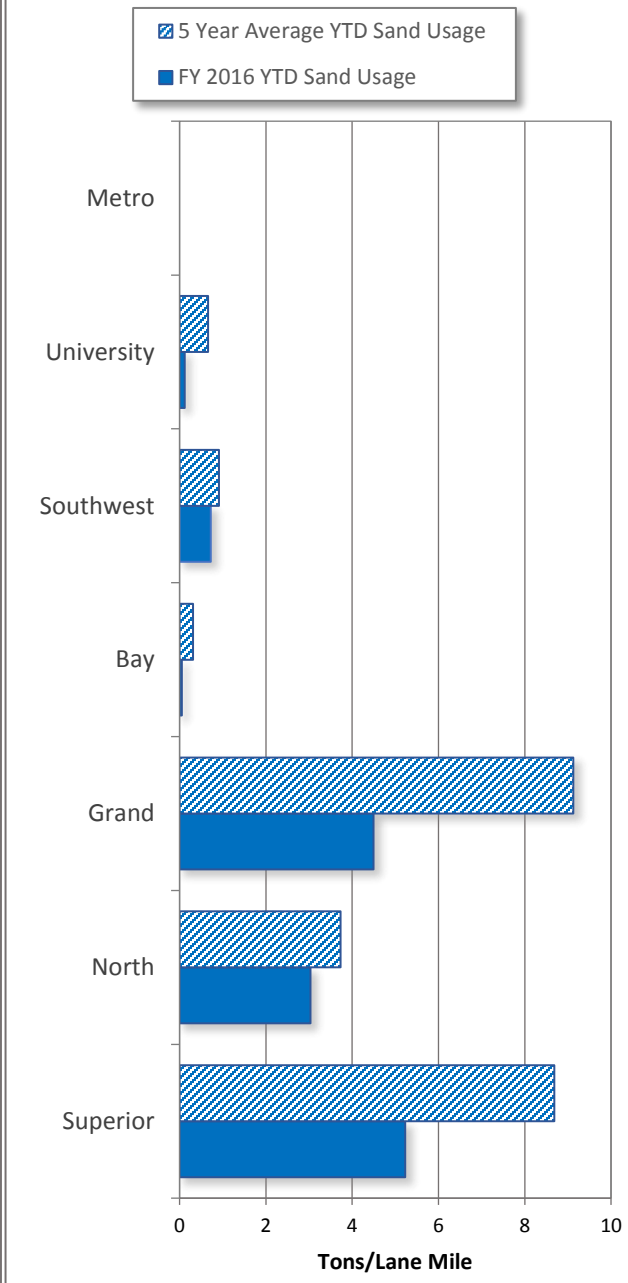


STATEWIDE SUMMARY : FY 2016 County & Garage Winter Material Usage

Salt Usage FY 2016 YTD per lane mile



Sand Usage FY 2016 YTD per lane mile



Liquid Usage FY 2016 YTD per lane mile